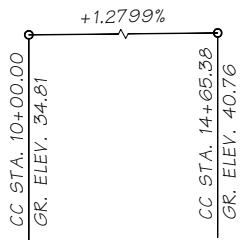
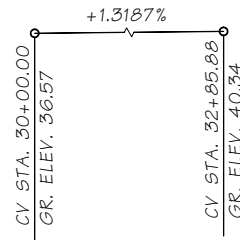


SEC. 29, T.32N., R.4E., W.M.
CITY OF STANWOOD

RETAINING WALL CONTROL POINTS		
POINT #	STATION	OFFSET
①	CC 11+82.83	21.22' LT.
②	CC 11+38.52	16.12' RT.
③	CC 11+48.36	14.99' RT.
④	CC 11+58.20	14.87' RT.
⑤	CC 11+68.02	14.81' RT.
⑥	CC 11+77.83	14.65' RT.
⑦	CC 14+01.64	20.77' LT.
⑧	CC 14+08.84	15.07' RT.
⑨	CC 14+20.31	15.05' RT.
⑩	CC 14+29.69	15.08' RT.
⑪	CC 14+36.14	16.97' RT.

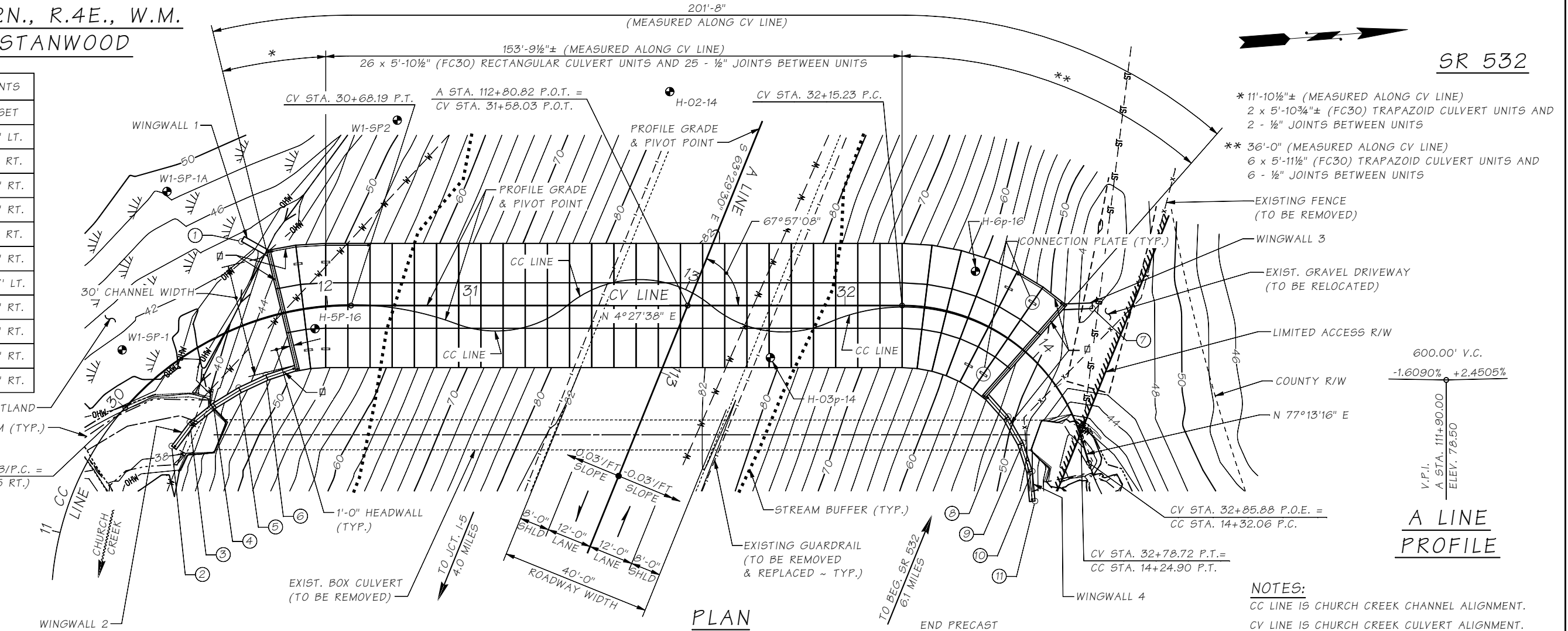


CC LINE
PROFILE

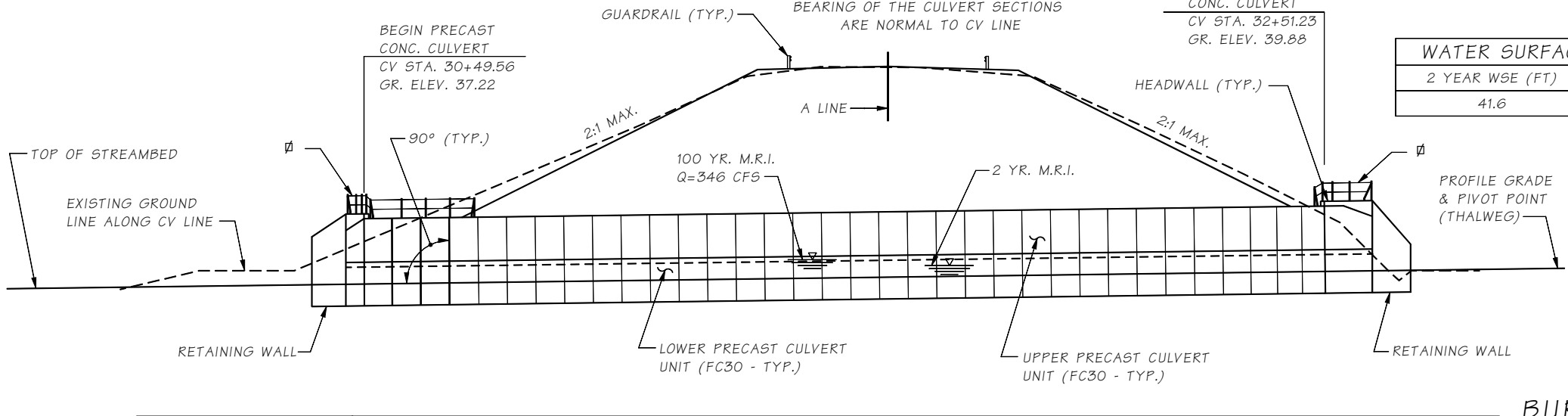


CV LINE
PROFILE

DATUM
NAVD 88



PLAN



ELEVATION

GRADE ELEVATIONS SHOWN ARE FINISH GRADES AT TOP OF STREAMBED ON CV LINE AND ARE EQUAL TO PROFILE GRADE

WATER SURFACE ELEVATIONS AT STRUCTURE INLET		
2 YEAR WSE (FT)	100 YEAR WSE (FT)	500 YEAR WSE (FT)
41.6	42.8	43.4

- EXIST. STORM SEWER (TO BE MODIFIED)
- ABANDONED WATER LINE (TO BE REMOVED)
- ORDINARY HIGH WATER
- NEW DITCH LINE
- SOIL BORING LOCATIONS
- FALL PROTECTION FENCE

BURIED STRUCTURE

30' PRECAST CONCRETE CULVERT (FC30)

LOADING: HL-93

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH_CREEK_FISH_PASSAGE_NWR\window files\LAYOU
Supervisor	Stoddard, RB	
Designed By	Tran, LH	05/16
Checked By		
Detailed By		
Bridge Projects Engr.		
Prelim. Plan By	Wei, J	06/16
Architect/Specialist	PBK, BSA, GAW	06/16
DATE	REVISION	BY APP'D

BRIDGE
AND
STRUCTURES
OFFICE



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Washington State
Department of Transportation
NOT FOR CONSTRUCTION

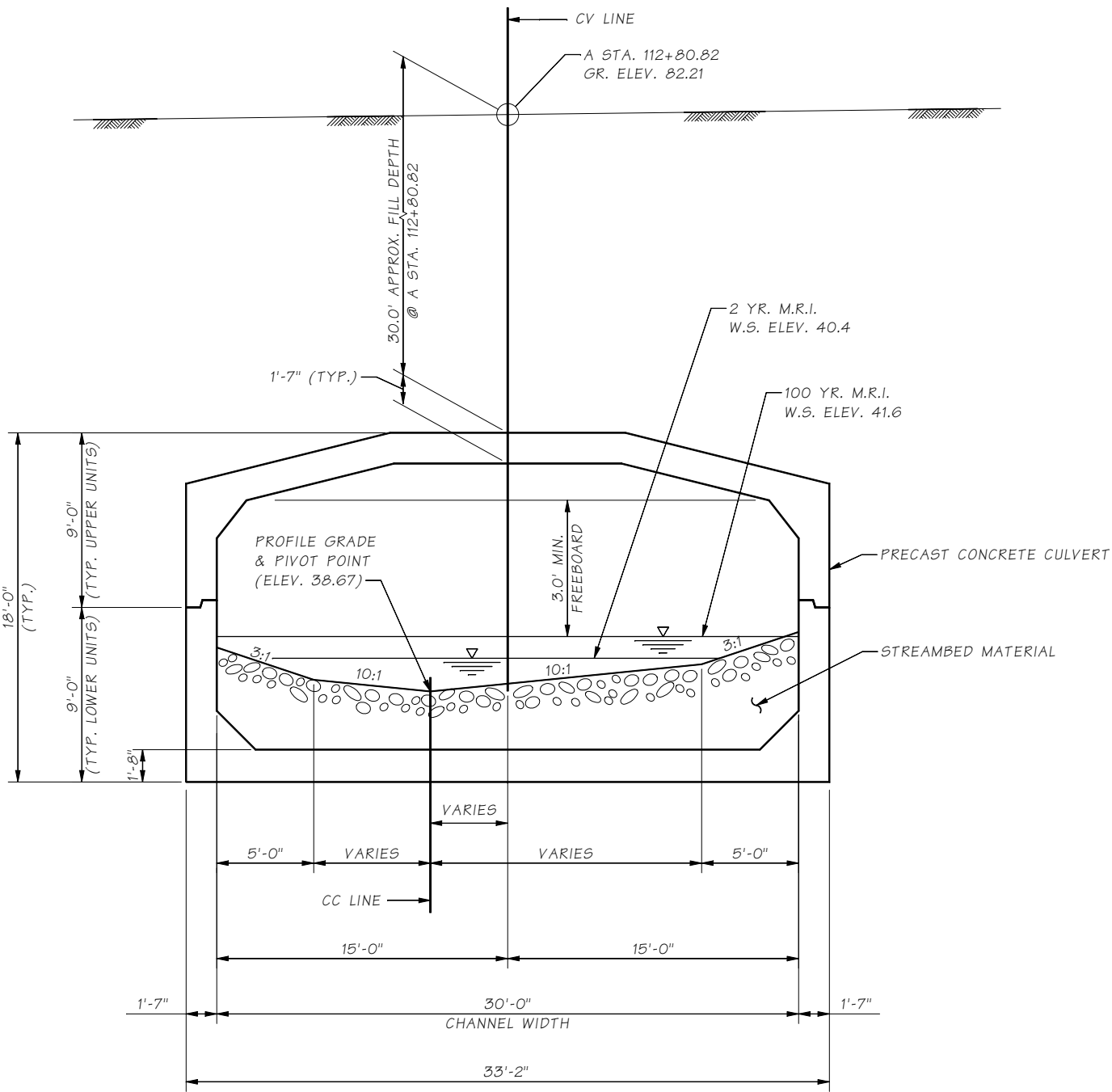
SR 532	BRIDGE SHEET NO. 1
CHURCH CREEK BRIDGE NO. 532/8	SHEET
LAYOUT	OF
	SHEETS

SR 532 FILE NO. SHEET 1

GENERAL NOTES:

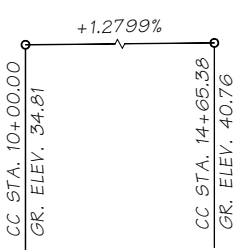
1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION DATED 2016, AND AMENDMENTS.
2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 7TH EDITION 2014 WITH INTERIM THROUGH 2015.
3. THE SEISMIC DESIGN OF THIS STRUCTURE HAS BEEN PREPARED IN ACCORDANCE WITH PUBLICATION NO. FHWA- NHI-10-034 DECEMBER 2009 EDITION "TECHNICAL MANUAL FOR DESIGN AND CONSTRUCTION OF ROAD TUNNELS - CIVIL ELEMENTS" USING A SEISMIC PEAK GROUND ACCELERATION OF 0.40g.
4. THE PRECAST CONCRETE SHALL BE CLASS 6000 AND ALL OTHER CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
5. ALL PLATES, BOLTS, AND WASHERS SHALL BE GALVANIZED PER AASHTO MIII.
6. SEGMENTAL PRECAST CONCRETE BOX CULVERT UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE ASTM C 1786 AND STANDARD SPECIFICATION SECTION 6-02.3(28). ALL JOINTS SHALL BE TONGUE AND GROOVE AND SEALED WITH JOINT SEALANT PER ASTM C 990 AND WRAPPED WITH EXTERNAL SEALING BAND PER ASTM C 877.
7. UNLESS OTHERWISE SHOWN IN THE PLANS, CONCRETE COVER MEASURED FROM THE FACE OF CONCRETE TO THE FACE OF ANY REINFORCING STEEL SHALL BE 2" AT ALL LOCATIONS OF THE PRECAST BOX CULVERT, 3" AT BOTTOM OF WINGWALL FOOTING AND 2" AT ALL OTHER LOCATIONS.
8. THE FABRICATOR SHALL DESIGN THE LIFTING AND TRANSPORTING OF THE PRECAST BOX CULVERT AND THE PRECAST RETAINING WALL OPTION PER STANDARD SPECIFICATIONS FOR SUBMITTAL.
9. BACKFILL ON BOTH SIDES OF THE CULVERT SHALL BE PLACED IN SEQUENCE AND COMPACTED IN ACCORDANCE TO THE STD. SPEC 2-09.3(1)E. THE MAXIMUM FILL HEIGHT DIFFERENCE MEASURED FROM SIDE TO SIDE SHALL NOT EXCEED 2'-0".
10. THE NOMINAL BEARING RESISTANCE OF BOX CULVERT BOTTOM SLAB SHALL BE TAKEN AS STATED IN THE GEOTECH REPORT, THE FACTORED BEARING RESISTANCE VALUES ARE AS FOLLOWS:

SLAB	SERVICE LIMIT STATE	STRENGHT LIMIT STATE	EXTREME LIMIT STATE
BOTTOM	KSF	KSF	KSF

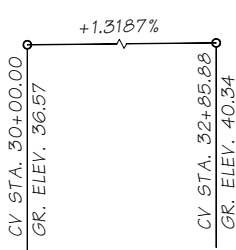


TYPICAL CULVERT CROSS SECTION

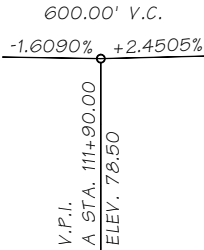
DIMENSIONS MEASURED NORMAL TO CV LINE
SHOWN AT CV STA. 31+58.03



CC LINE
PROFILE



CV LINE
PROFILE



A LINE
PROFILE

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR>window files\GENERAL NOTES.WND					
Supervisor	Stoddard, RB			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
Designed By	Tran, LH	05/16		10	WASH.		TOTAL SHEETS
Checked By							
Detailed By							
Bridge Projects Engr.					JOB NUMBER		
Prelim. Plan By							
Architect/Specialist		DATE	REVISION	BY	APP'D	CONTRACT NO.	



BRIDGE
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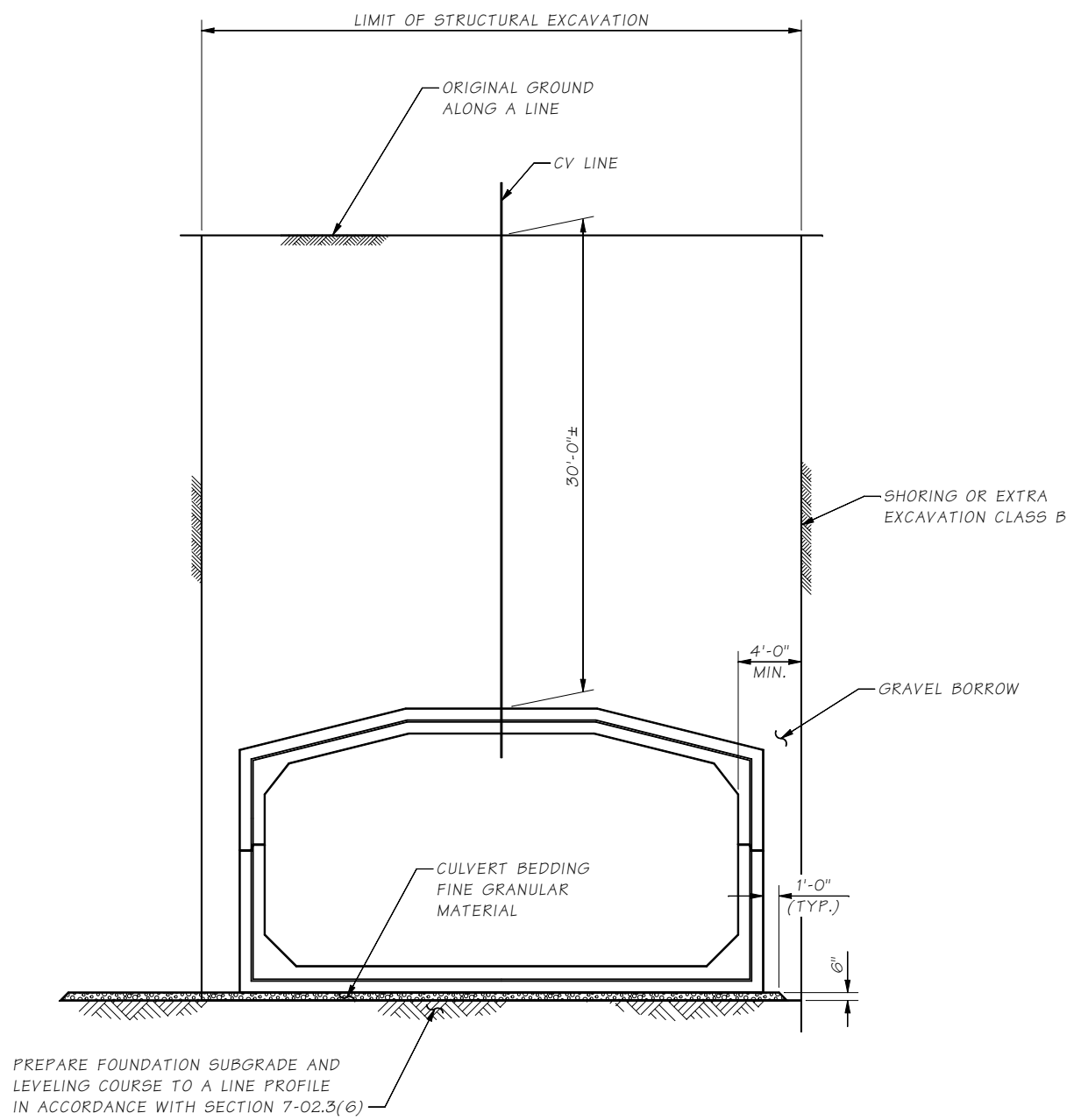


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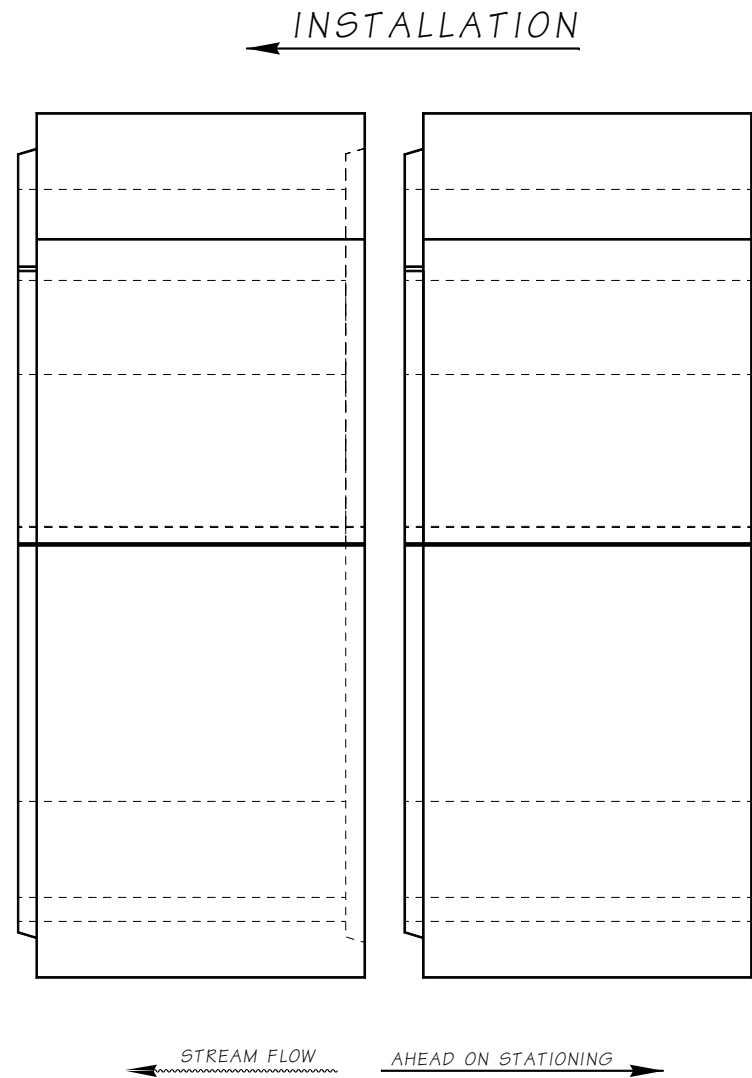
NOT FOR CONSTRUCTION

SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		3
GENERAL NOTES AND DATA		SHEET
		OF
		SHEETS



SUBGRADE PREPARATION

EXCAVATION FOR WINGWALLS NOT SHOWN.
SEE "WINGWALL DETAIL SHEETS" FOR DETAILS
NOT SHOWN



**ELEVATION
INSTALLATION PROCEDURE**

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\CONSTR_SEQ.WND									
Supervisor	Stoddard, RB										
Designed By	Tran, LH	05/16									
Checked By											
Detailed By											
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist											
	DATE	REVISION	BY	APP'D							



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SR 532

CHURCH CREEK BRIDGE NO. 532/8

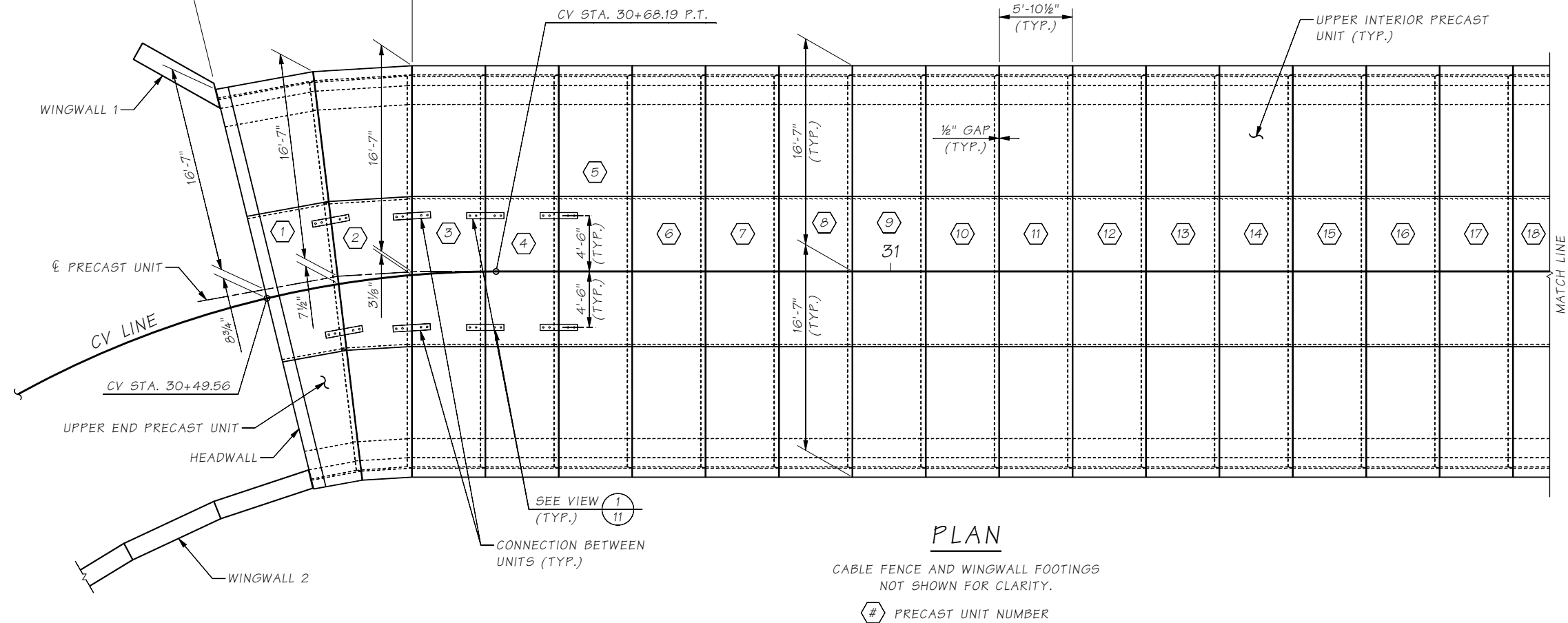
**STRUCTURAL EXCAVATION AND
SUBGRAD PREPARATION**

BRIDGE
SHEET
NO.
4

SHEET
OF
SHEETS

11'-10 1/2" ± (MEASURED ALONG CV LINE)
2 x 5'-10 3/4" ± (FC30) TRAPEZOID CULVERT UNITS AND
2 - 1/2" JOINTS BETWEEN UNITS

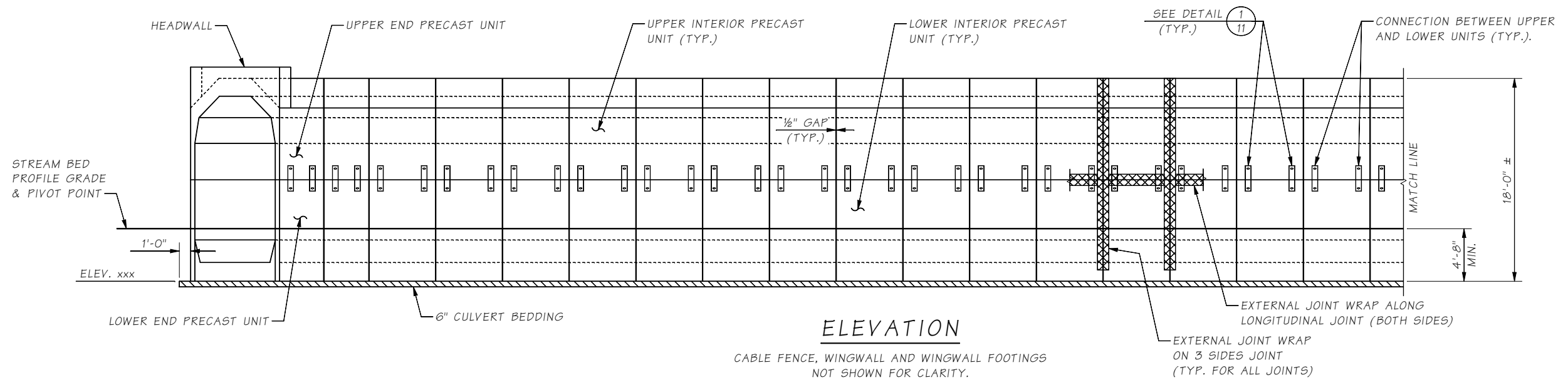
153'-9 1/2" ± (MEASURED ALONG CV LINE)
26 x 5'-10 1/2" (FC30) RECTANGULAR CULVERT UNITS AND 25 - 1/2" JOINTS BETWEEN UNITS



PLAN

CABLE FENCE AND WINGWALL FOOTINGS
NOT SHOWN FOR CLARITY.

PRECAST UNIT NUMBER



ELEVATION

CABLE FENCE, WINGWALL AND WINGWALL FOOTINGS
NOT SHOWN FOR CLARITY.

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH_CREEK_FISH_PASSAGE_NWR\window files\PCS LAYOUT 1.WND					
Supervisor	Stoddard, RB						
Designed By	Tran, LH	05/16					
Checked By							
Detailed By							
Bridge Projects Engr.							
Prelim. Plan By							
Architect/Specialist							
DATE		REVISION		BY	APPD		

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER				
CONTRACT NO.				



BRIDGE
AND
STRUCTURES
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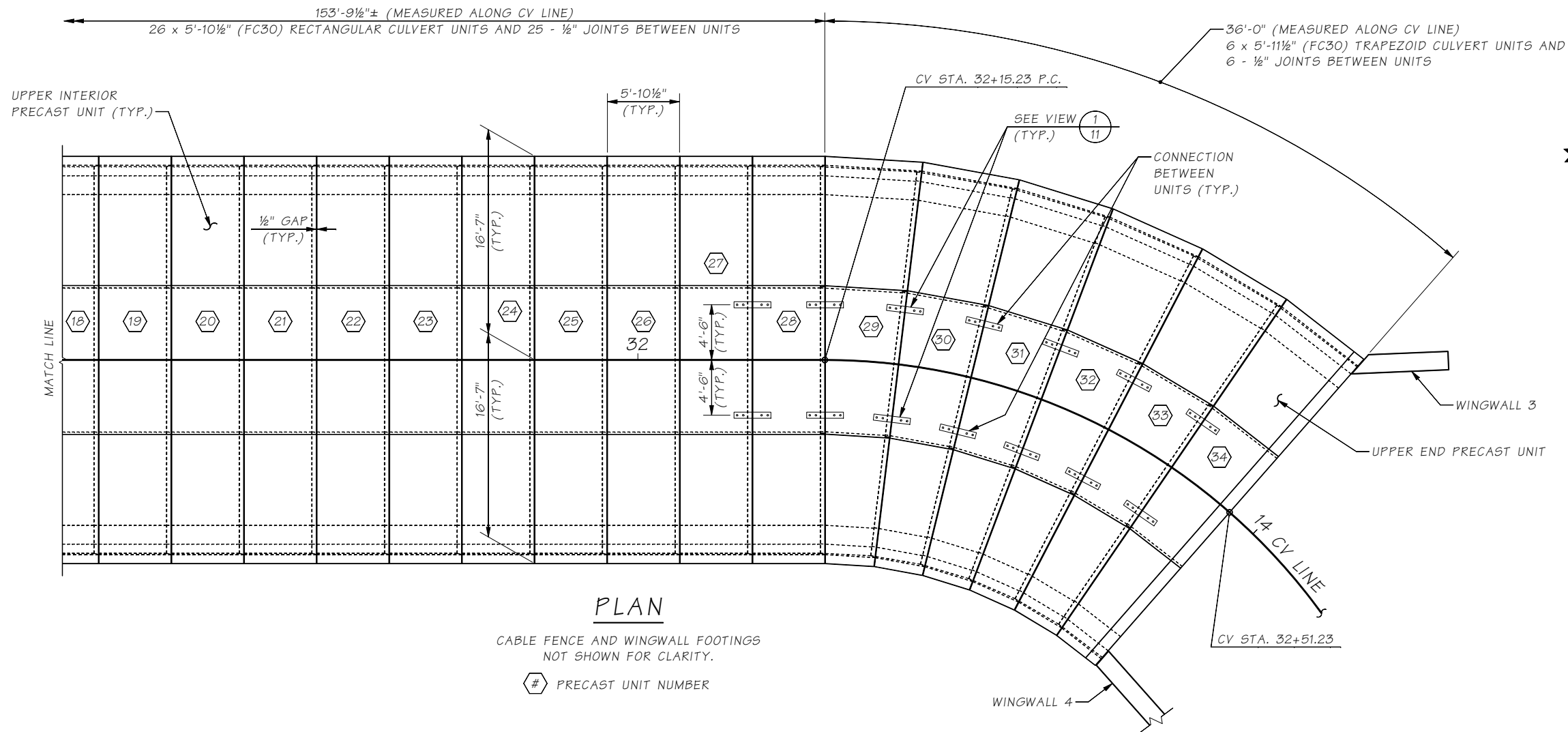
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SR 532

CHURCH CREEK BRIDGE NO. 532/8

PRECAST UNIT LAYOUT
DETAIL 1 OF 2

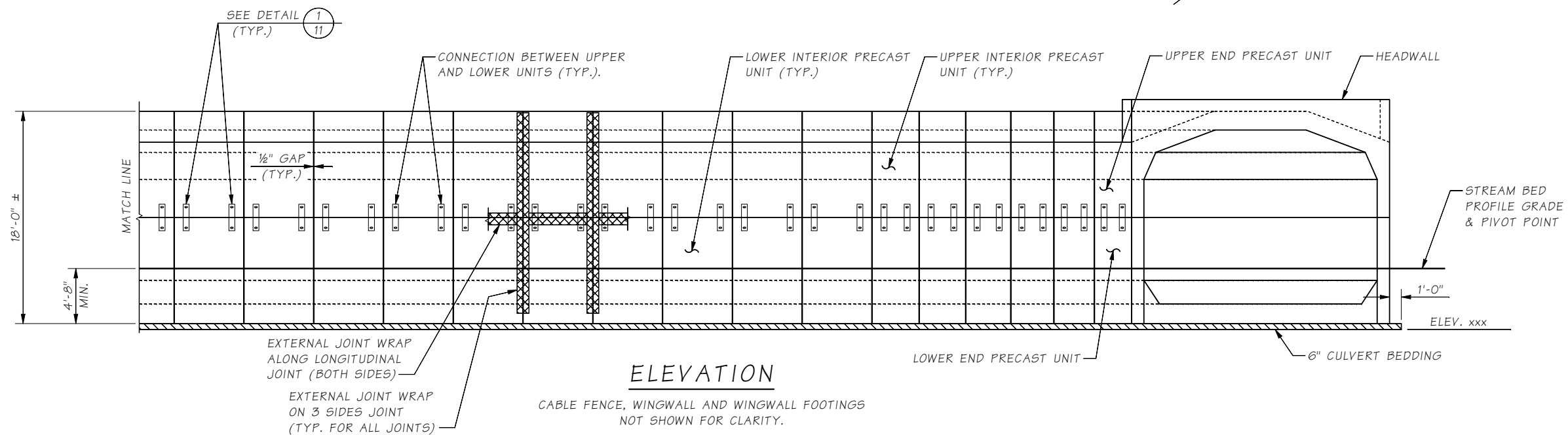
BRIDGE
SHEET
NO.
5
SHEET
OF
SHEETS



PLAN

CABLE FENCE AND WINGWALL FOOTINGS
NOT SHOWN FOR CLARITY.

PRECAST UNIT NUMBER



ELEVATION

CABLE FENCE, WINGWALL AND WINGWALL FOOTINGS
NOT SHOWN FOR CLARITY.

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\PCS LAYOUT 2.WND					
Supervisor	Stoddard, RB						
Designed By	Tran, LH	06/16					
Checked By							
Detailed By							
Bridge Projects Engr.							
Prelim. Plan By							
Architect/Specialist							
DATE	REVISION	BY	APP'D	CONTRACT NO.			



BRIDGE
AND
STRUCTURES
OFFICE



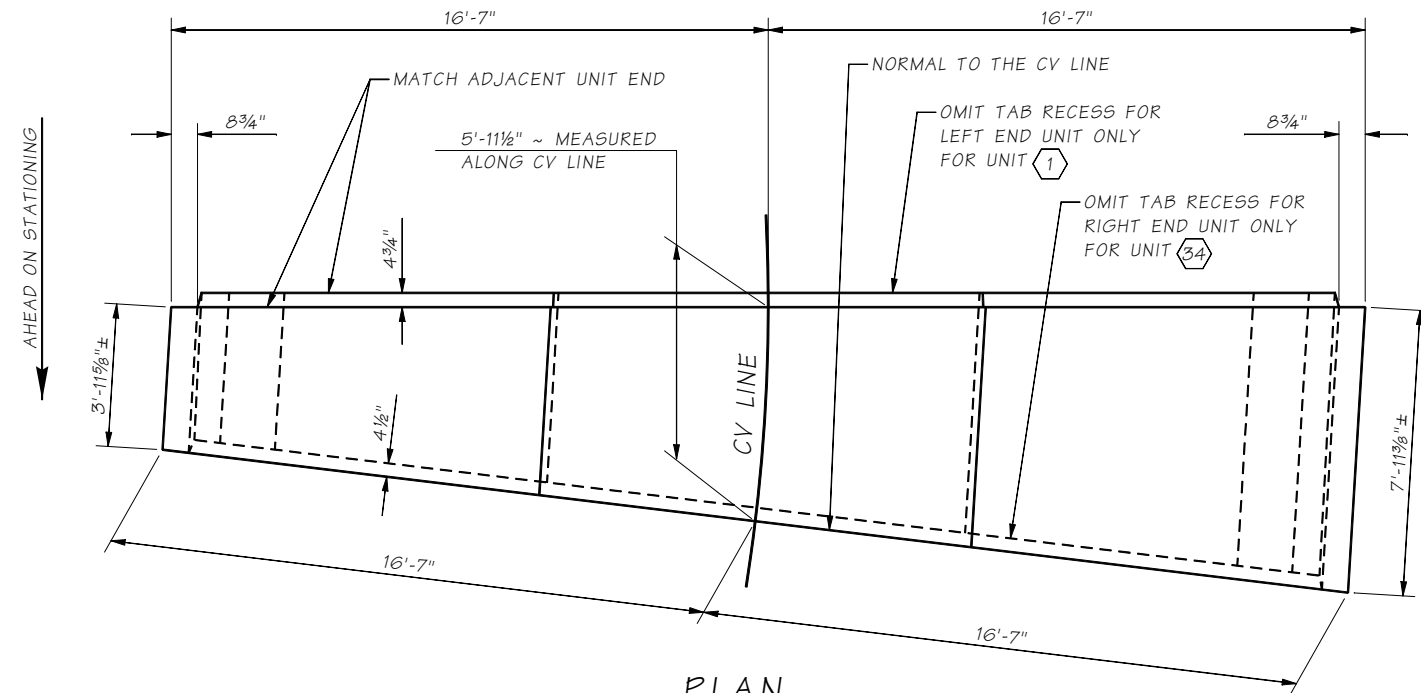
PRELIMINARY
Washington State
Department of Transportation
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SR 532

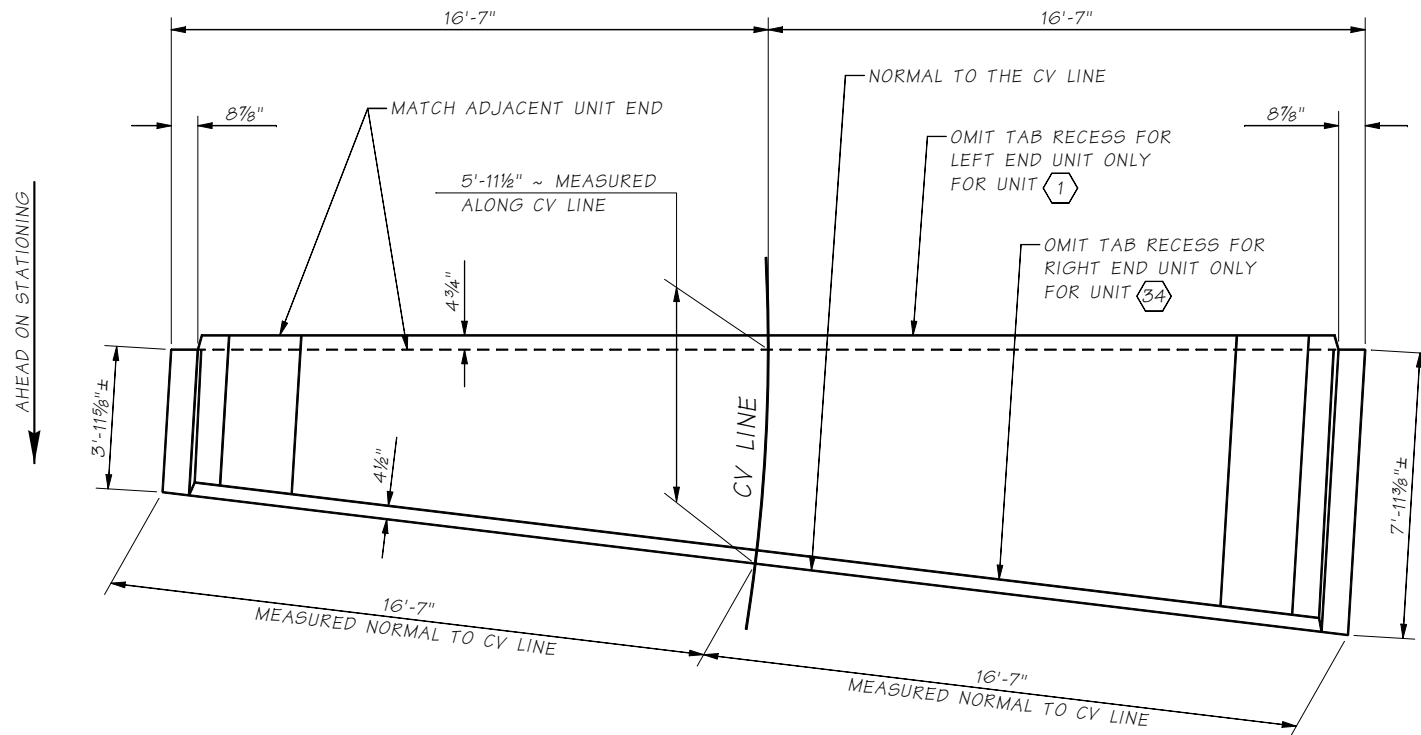
CHURCH CREEK BRIDGE NO. 532/8

PRECAST UNIT LAYOUT
DETAIL 2 OF 2

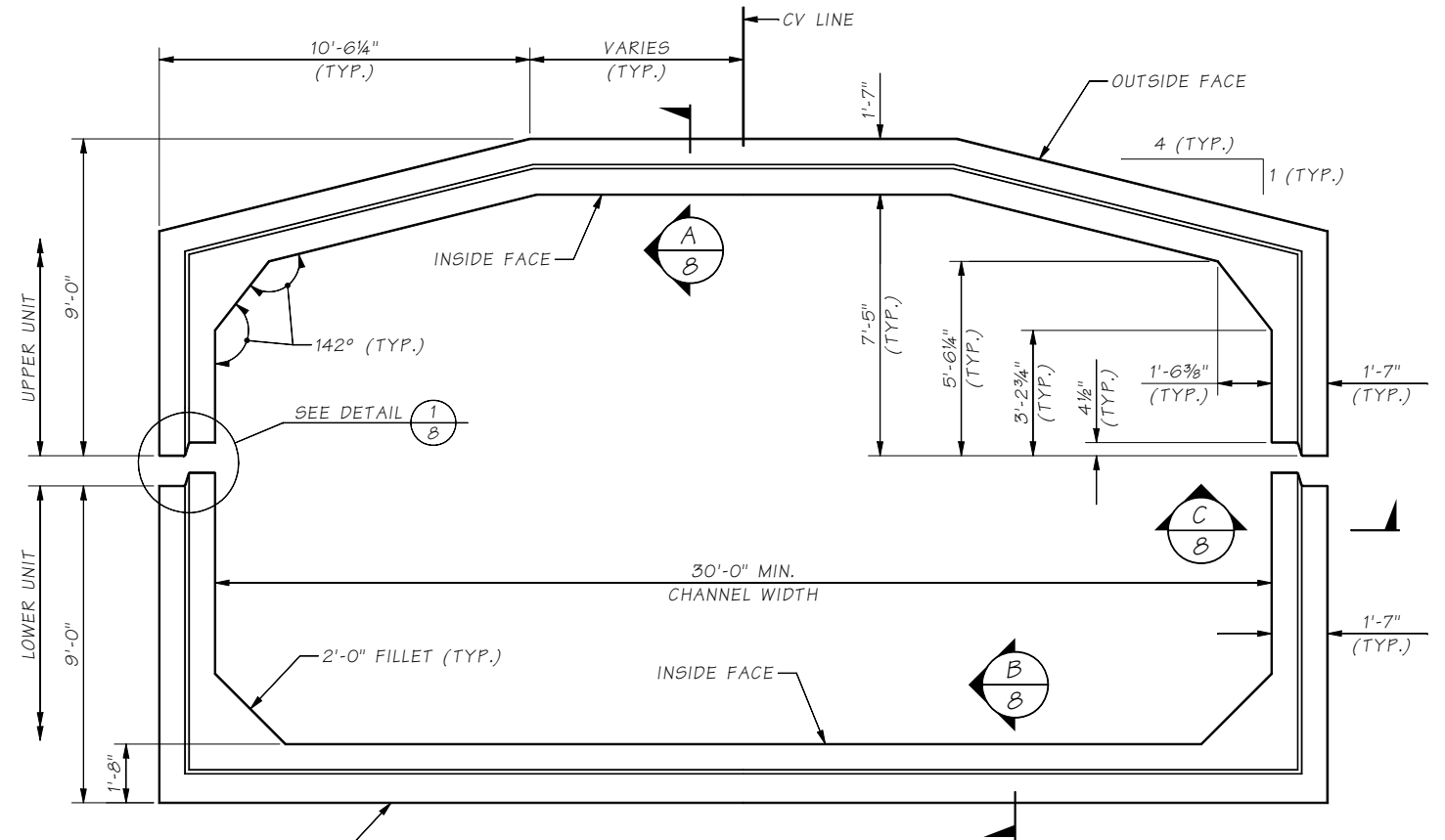
BRIDGE
SHEET
NO.
6
SHEET
OF
SHEETS



**PLAN
UPPER TRAPEZOID UNIT**
TYPICAL UPPER UNIT SHOWN.
END UPPER UNITS SIMILAR UNLESS SHOWN OTHERWISE.



**PLAN
LOWER TRAPEZOID UNIT**
TYPICAL LOWER UNIT SHOWN.
END LOWER UNITS SIMILAR UNLESS SHOWN OTHERWISE.



UNIT TYPICAL SECTION
SHOWN LOOKING AHEAD ON STATION.
END UNITS SIMILAR UNLESS OTHERWISE SHOWN.

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\PCS TRAP GEOM 1 OF 2.WND					
Supervisor	Stoddard, RB						
Designed By	Tran, LH	07/16					
Checked By							
Detailed By							
Bridge Projects Engr.							
Prelim. Plan By							
Architect/Specialist							
	DATE	REVISION	BY	APPD			

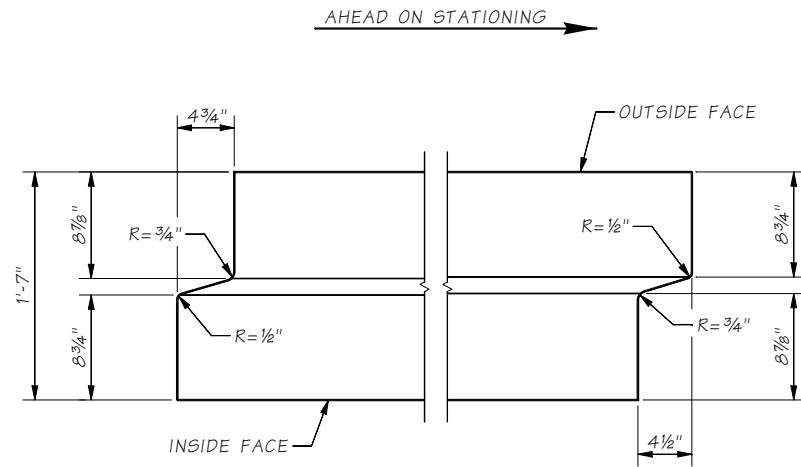


BRIDGE
AND
STRUCTURES
OFFICE

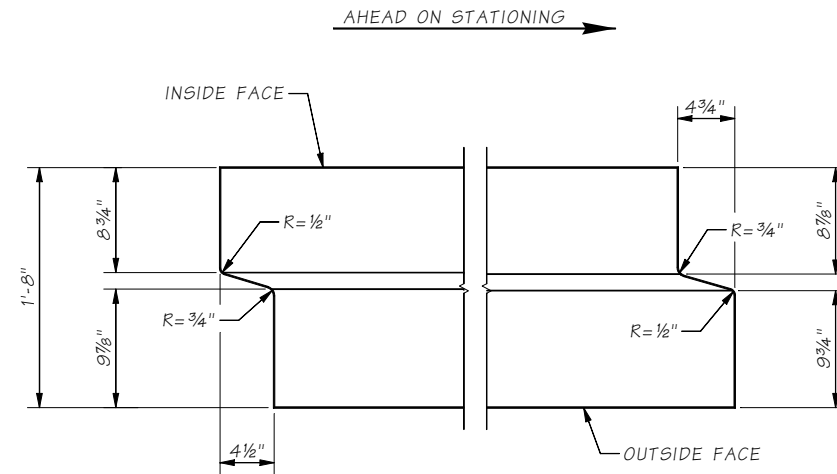


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Washington State
Department of Transportation
NOT FOR CONSTRUCTION

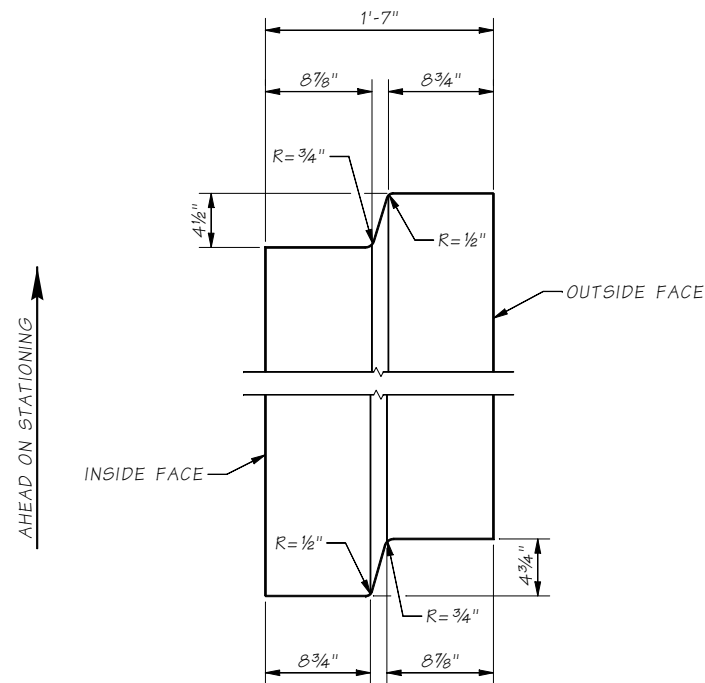
SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		7
PRECAST TRAPEZOID UNIT GEOMETRY DETAIL 1 OF 2		OF
		SHEETS



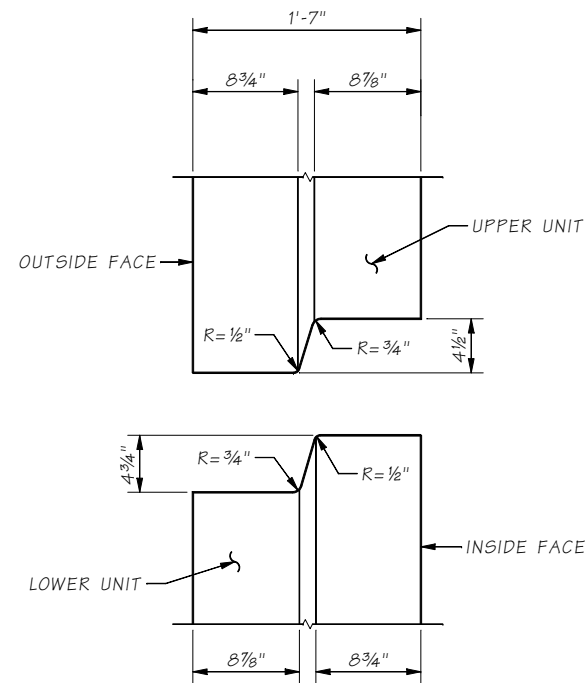
SECTION A
UPPER UNIT 7



SECTION B
LOWER UNIT 7



SECTION C
7



DETAIL 1
7

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR>window files\PCS TRAP GEOM 2 OF 2.WND							
Supervisor	Stoddard, RB			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Designed By	Tran, LH	07/16		10	WASH.				
Checked By									
Detailed By									
Bridge Projects Engr.					JOB NUMBER				
Prelim. Plan By									
Architect/Specialist					CONTRACT NO.				
	DATE	REVISION	BY	APP'D					

Tue Jul 19 14:47:54 2016

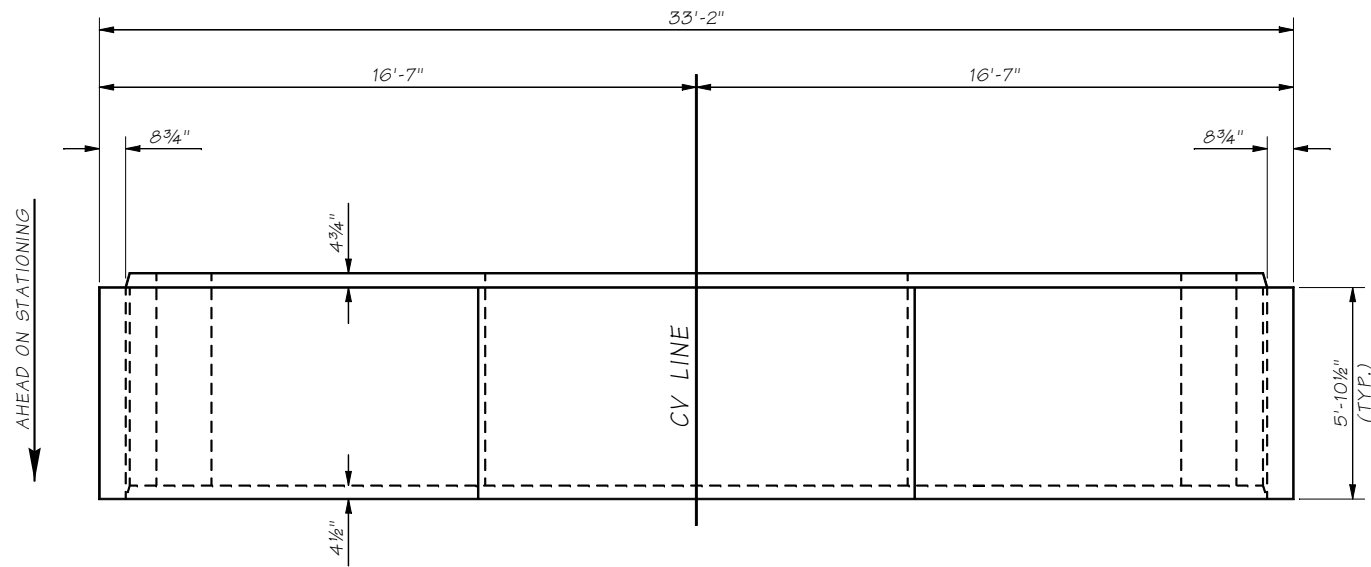


BRIDGE
AND
STRUCTURES
OFFICE

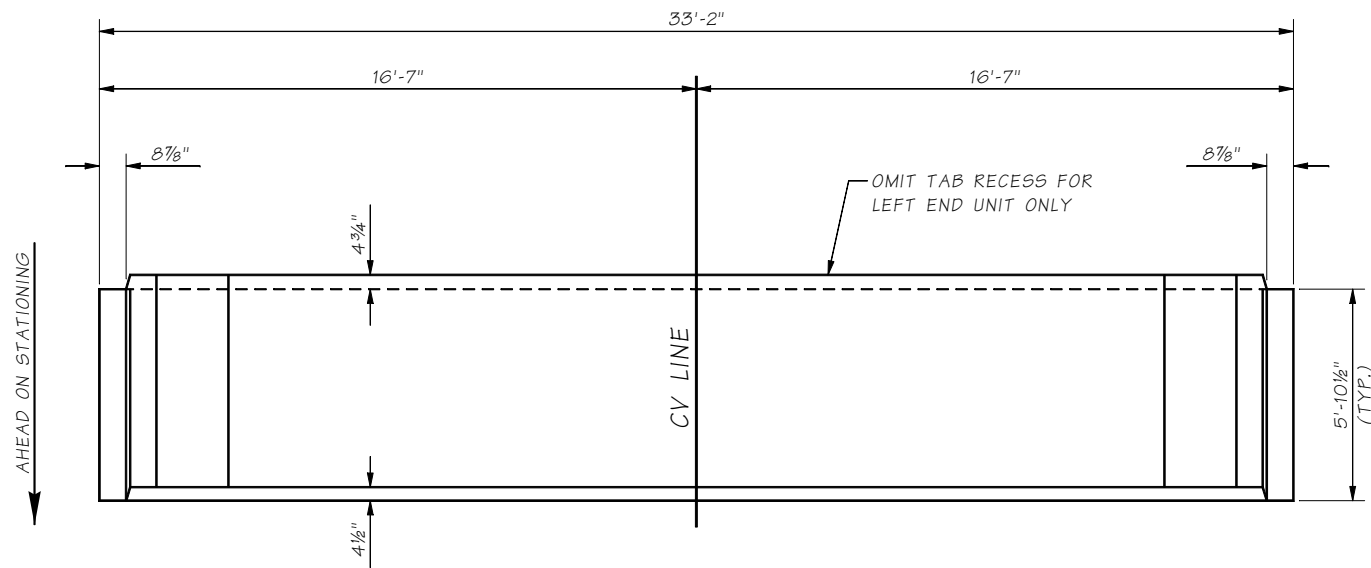


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 **Washington State
Department of Transportation**
NOT FOR CONSTRUCTION

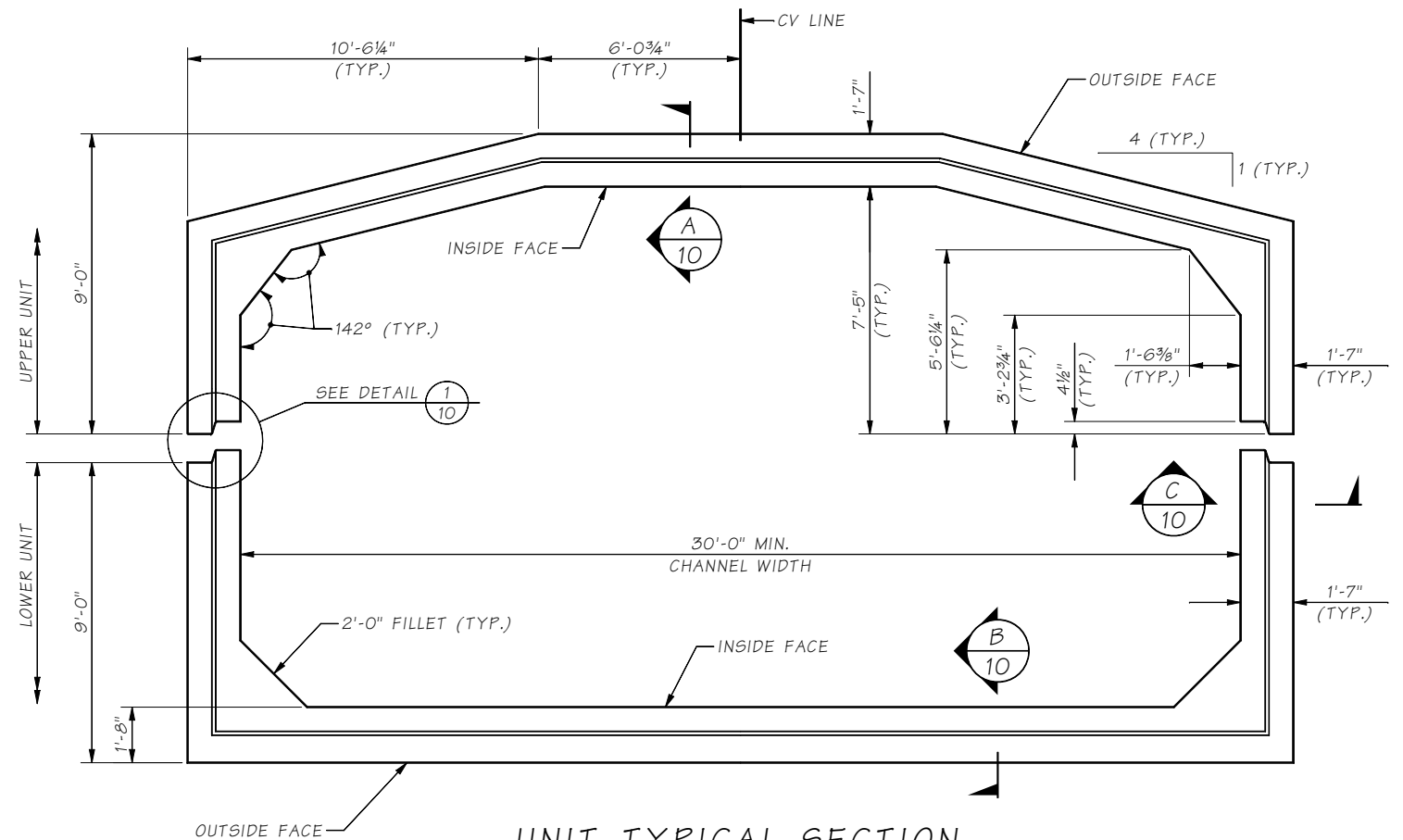
SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		8
PRECAST TRAPEZOID UNIT GEOMETRY DETAILS 2 OF 2		SHEET
		OF
		SHEETS



PLAN
UPPER RECTANGULAR UNIT
TYPICAL UPPER UNIT SHOWN.
END UPPER UNITS SIMILAR UNLESS SHOWN OTHERWISE.



PLAN
LOWER RECTANGULAR UNIT
TYPICAL LOWER UNIT SHOWN.
END LOWER UNITS SIMILAR UNLESS SHOWN OTHERWISE.



UNIT TYPICAL SECTION
SHOWN LOOKING AHEAD ON STATION.
END UNITS SIMILAR UNLESS OTHERWISE SHOWN.

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\PCS RECT GEOM 1 OF 2.WND					
Supervisor	Stoddard, RB						
Designed By	Tran, LH	05/16					
Checked By							
Detailed By							
Bridge Projects Engr.							
Prelim. Plan By							
Architect/Specialist	DATE	REVISION	BY	APP'D			

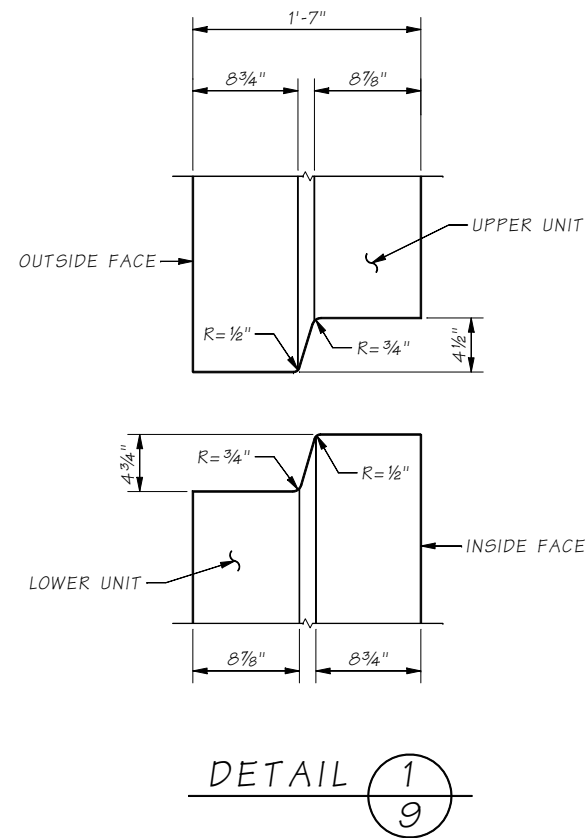
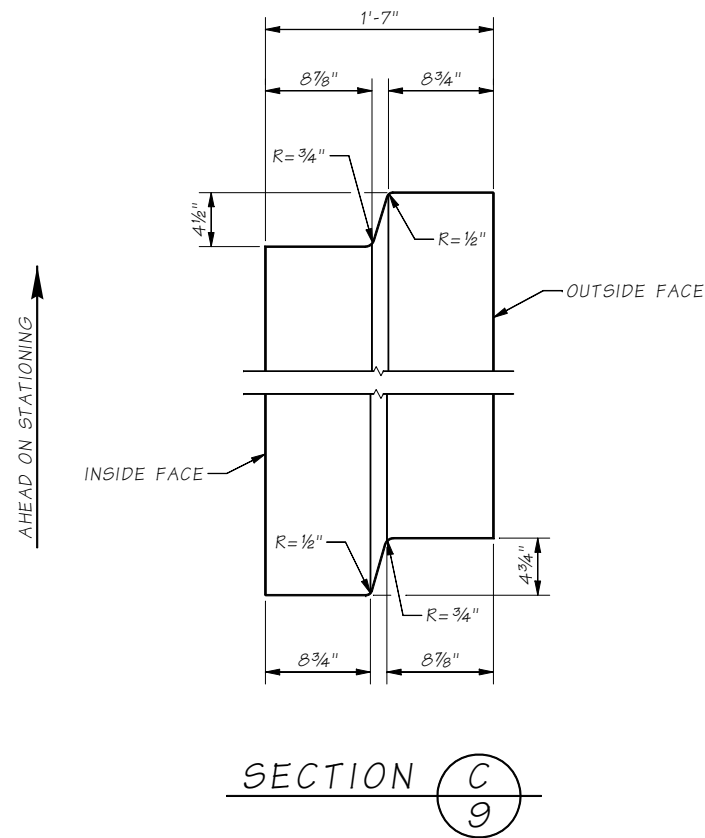
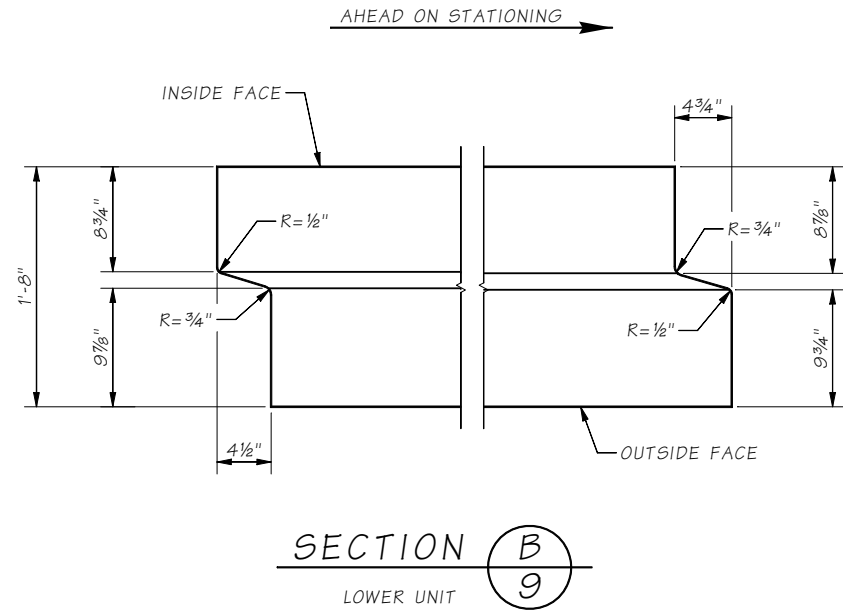
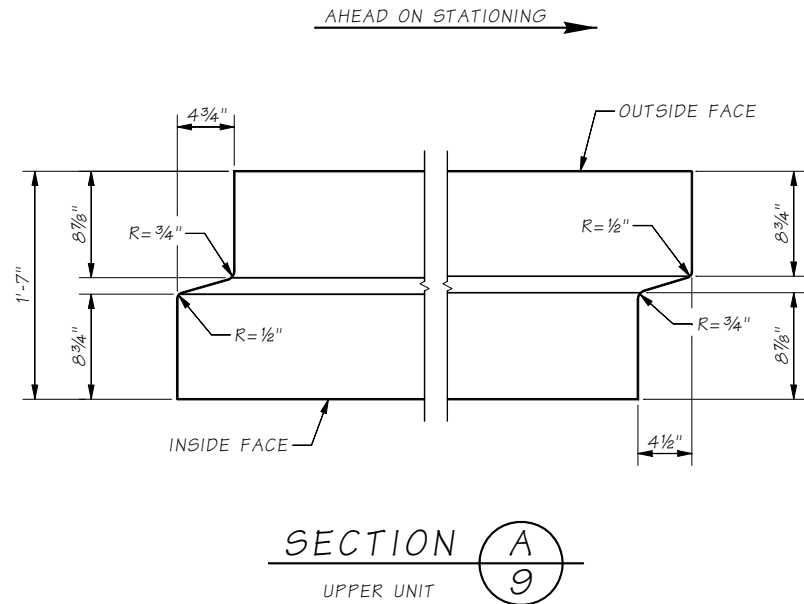


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Department of Transportation
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SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		9
PRECAST RECTANGULAR UNIT GEOMETRY DETAIL 1 OF 2		OF
		SHEETS



Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\PCS RECT GEOM 2 OF 2.WND					
Supervisor	Stoddard, RB			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
Designed By	Tran, LH	06/16		10	WASH.		TOTAL SHEETS
Checked By							
Detailed By							
Bridge Projects Engr.					JOB NUMBER		
Prelim. Plan By					CONTRACT NO.		
Architect/Specialist		DATE	REVISION	BY	APP'D		

Tue Jul 19 14:47:55 2016

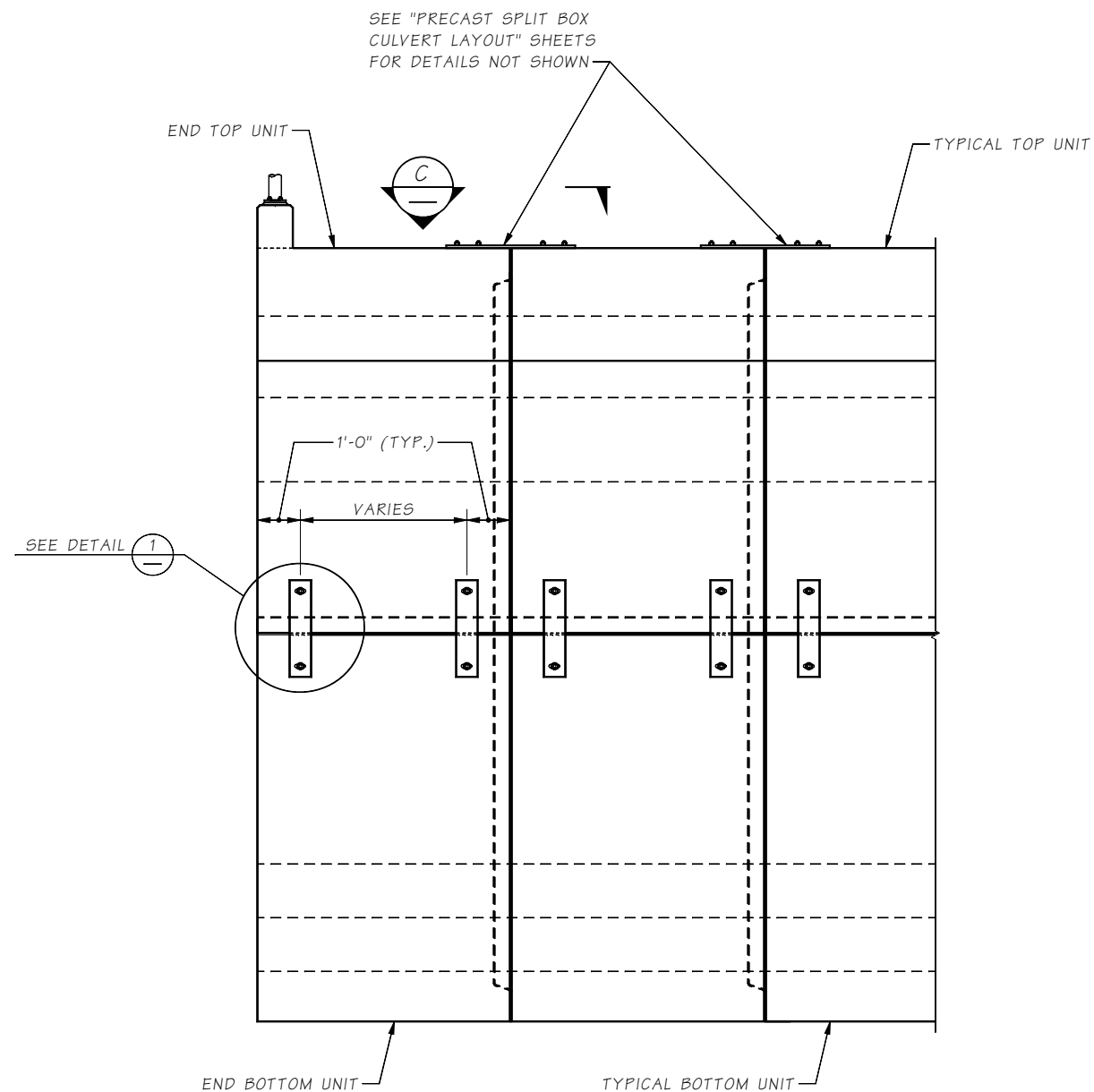


BRIDGE
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STRUCTURES
OFFICE

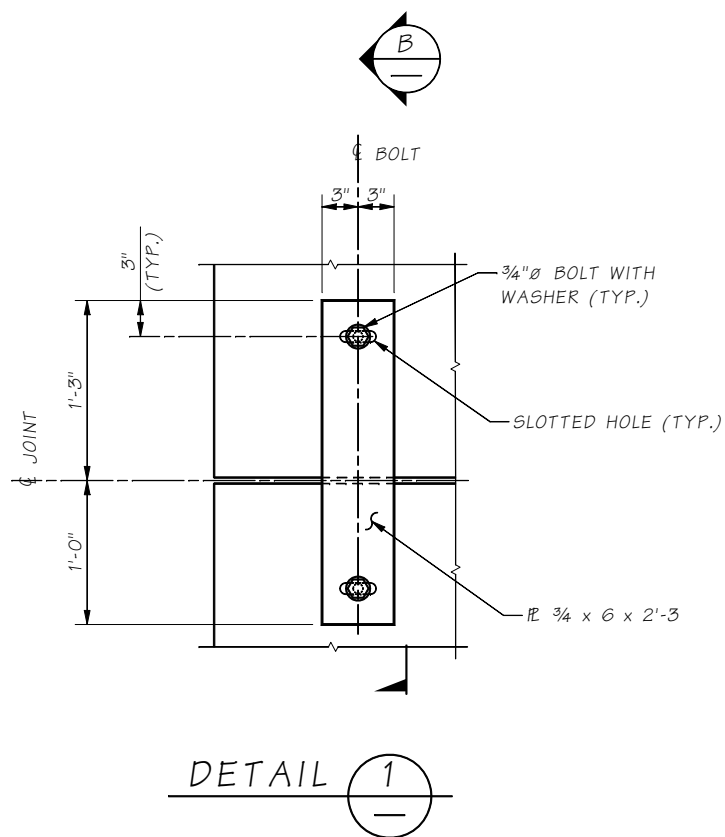


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Washington State
Department of Transportation
NOT FOR CONSTRUCTION

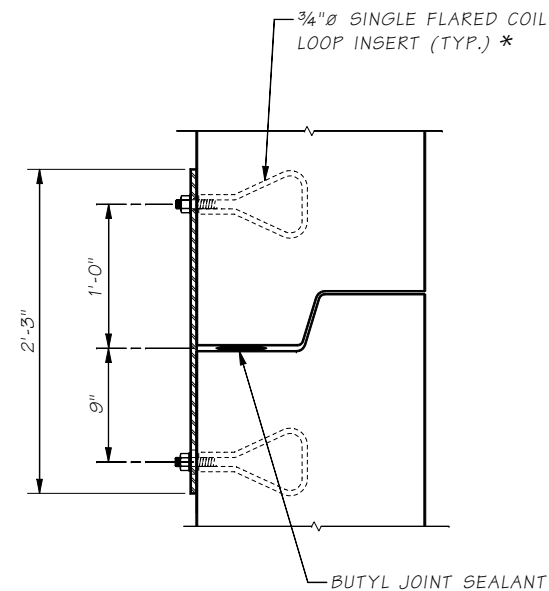
SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		10
PRECAST RECTANGULAR UNIT GEOMETRY DETAILS 2 OF 2		SHEET
		OF
		SHEETS



ELEVATION
TYPICAL RECTANGULAR UNIT

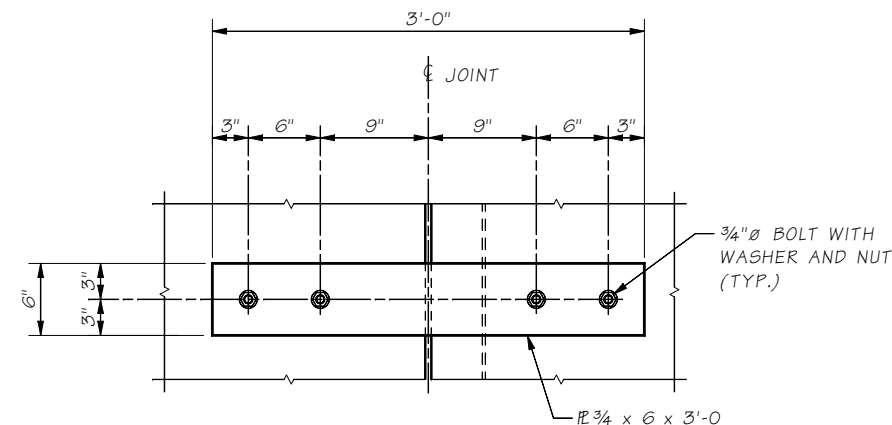


DETAIL 1



SECTION B
REINFORCING NOT SHOWN FOR CLARITY.

* OTHER ANCHOR DEVICE OR DRILLED HOLE WITH EPOXY RESIN MAY BE USED. SUBMIT DETAILS TO THE ENGINEER FOR APPROVAL.



VIEW C
LONGITUDINAL TIE

NOTE:
ALL PLATES, BOLTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M318.

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\PCS CONNECTON DTL.wnd									
Supervisor	Stoddard, RB										
Designed By	Tran, LH	05/16									
Checked By											
Detailed By											
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist											
	DATE	REVISION	BY	APP'D							

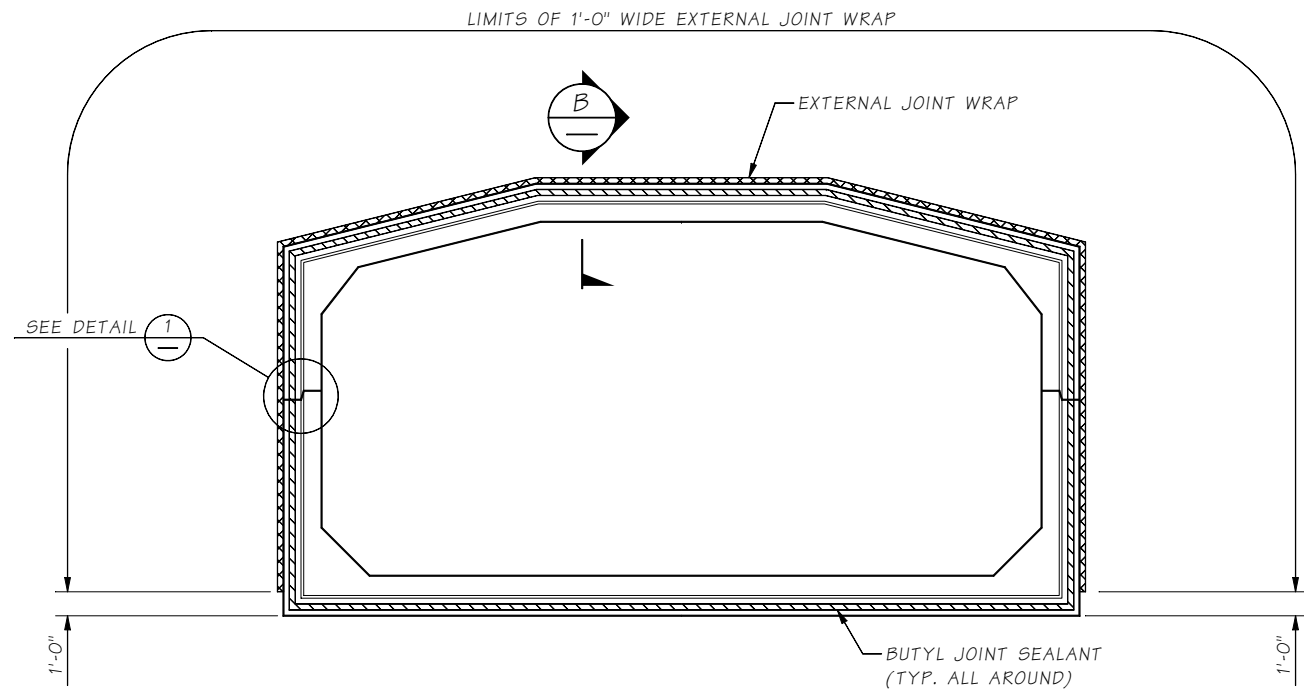


BRIDGE
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STRUCTURES
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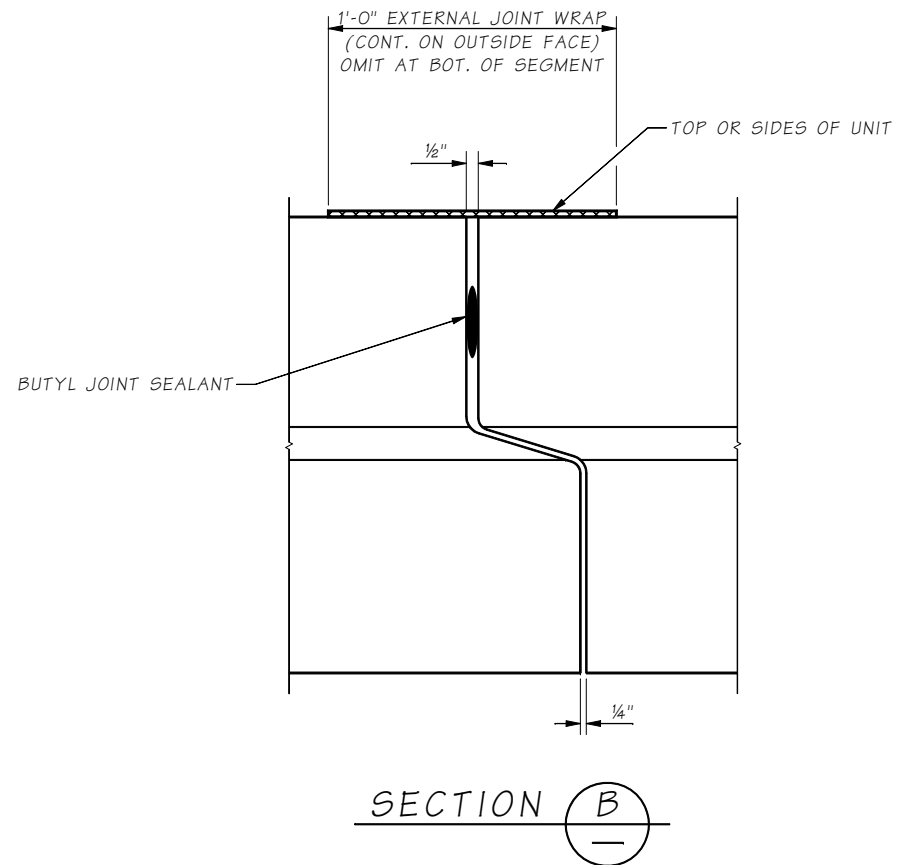
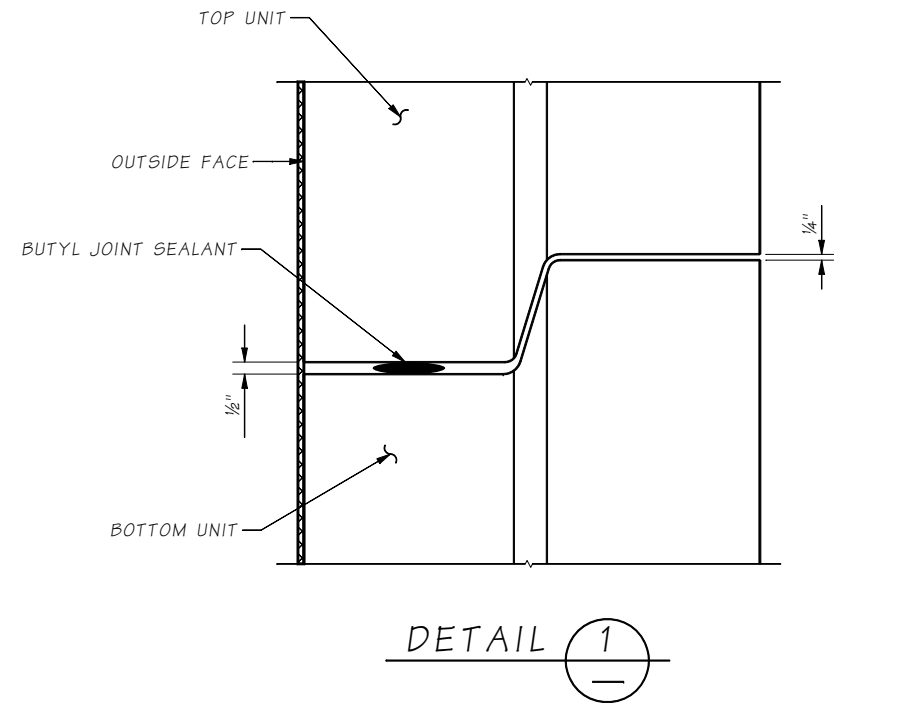
PRELIMINARY
Washington State
Department of Transportation
NOT FOR CONSTRUCTION

SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		11
PRECAST SEGMENT BOX CULVERT CONNECTION DETAILS		SHEET
		OF
		SHEETS



SEAL DETAIL ~ ELEVATION VIEW
TYPICAL EXCEPT END SIDE OF END UNIT

SECTION A
5



Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\PCS JOINT DTL.wnd					
Supervisor	Stoddard, RB			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
Designed By	Tran, LH	05/16		10	WASH.		TOTAL SHEETS
Checked By							
Detailed By							
Bridge Projects Engr.							
Prelim. Plan By							
Architect/Specialist							
DATE		REVISION		BY	APP'D		

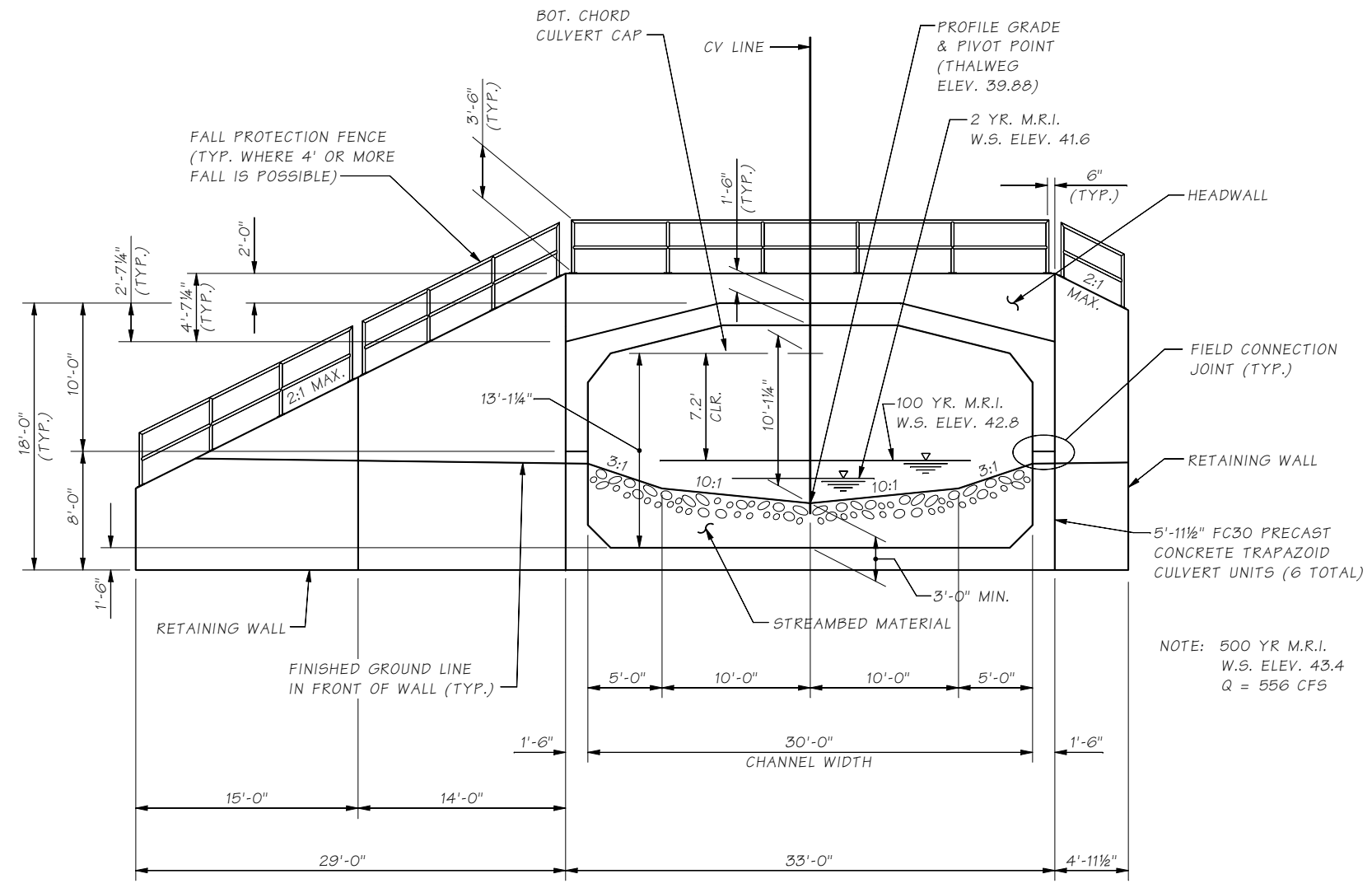


BRIDGE
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STRUCTURES
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Washington State
Department of Transportation
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SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		12
PRECAST SEGMENT BOX CULVERT SEAL AND JOIN SEAL DETAIL		SHEET
		OF
		SHEETS



REFERENCE LINE
ELEVATION 10.0

DEVELOPED CULVERT END
ELEVATION - UP STREAM

LOOKING BACK ON STATIONING
CV LINE STA. 32+51.06

Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR>window files\WINGWALL 1.wnd						
Supervisor	Stoddard, RB							
Designed By	Tran, LH	05/16						
Checked By								
Detailed By								
Bridge Projects Engr.								
Prelim. Plan By								
Architect/Specialist								
	DATE	REVISION	BY	APPD				

Tue Jul 19 14:47:57 2016



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SR 532

CHURCH CREEK BRIDGE NO. 532/8

WINGWALL
DETAILS 1 OF 4

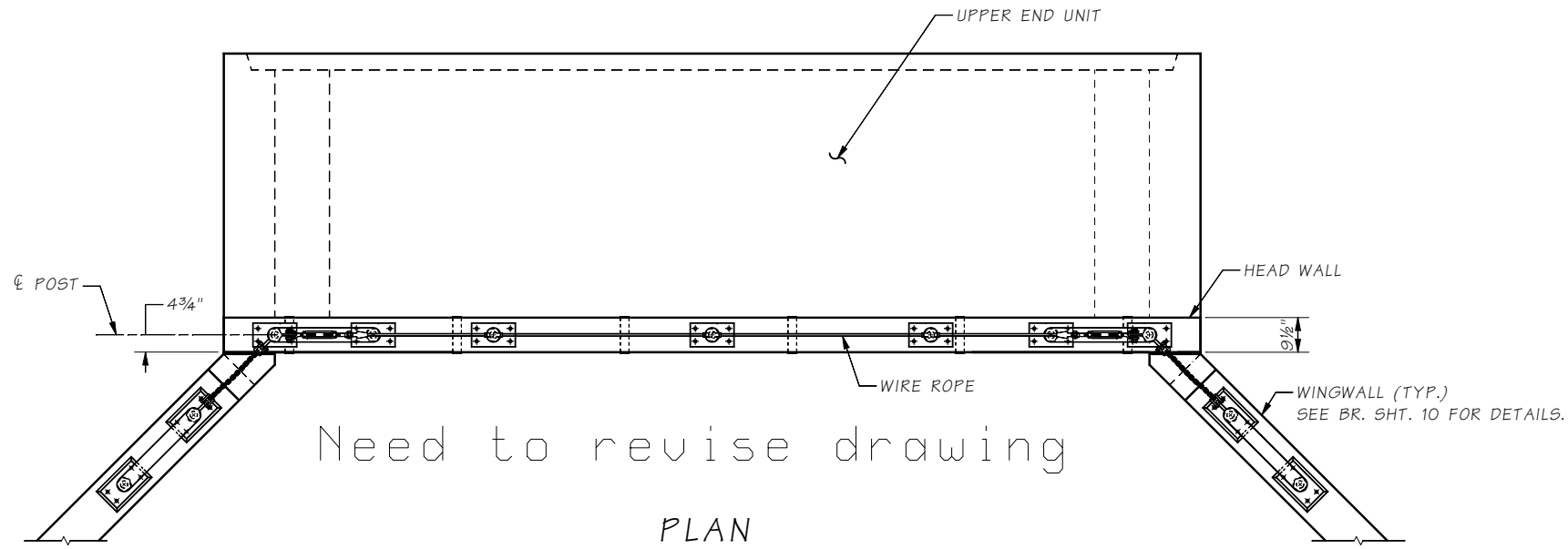
BRIDGE
SHEET
NO.

13

SHEET

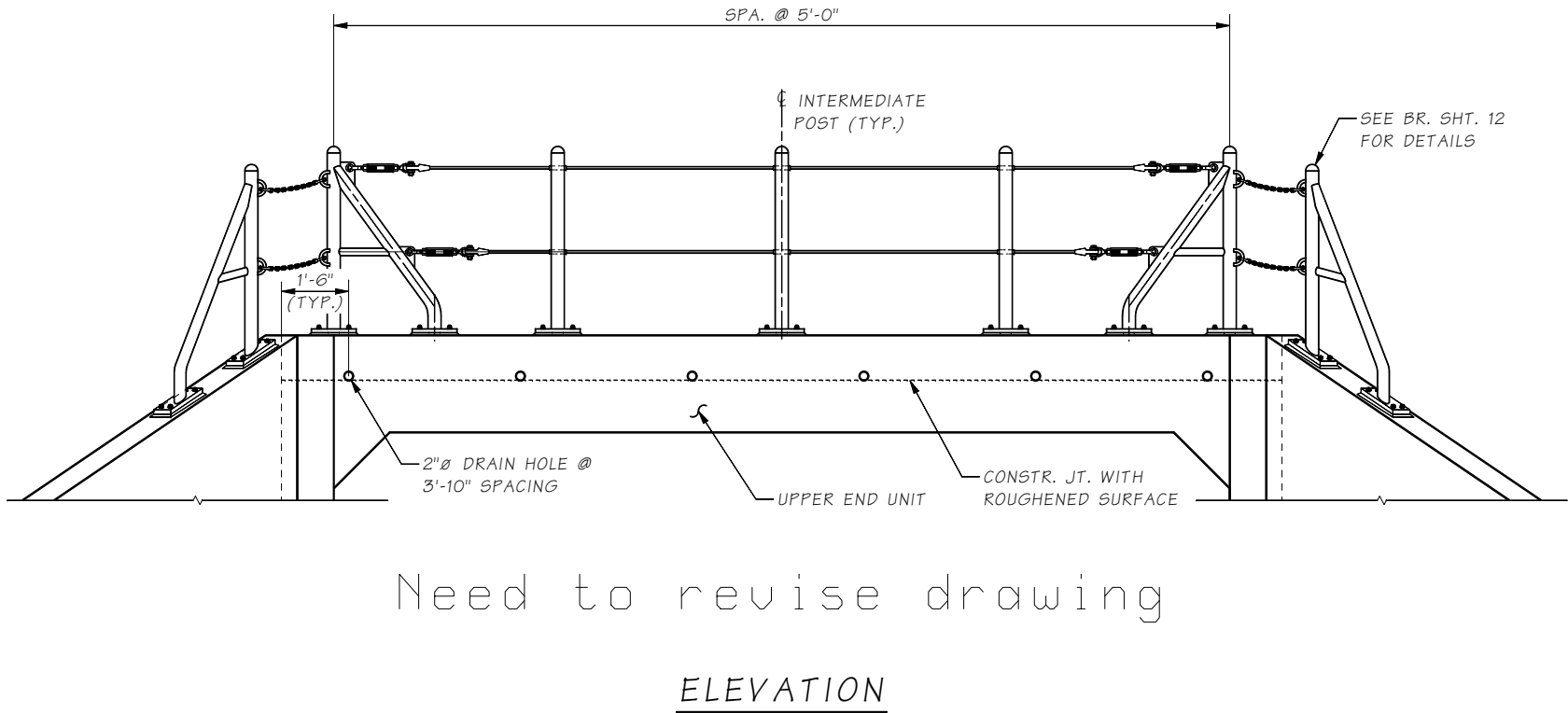
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SHEETS



NOTES:

1. ALL POSTS AND BRACES SHALL BE STEEL PIPE ASTM A53 GRADE B, TYPE E OR S, OR EQUIVALENT HSS ROUND TUBE ASTM A500 GRADE B.
2. ALL STEEL PLATES SHALL BE ASTM A36 OR ASTM A572.
3. WIRE ROPE SHALL CONFORM TO ASTM A603 WITH CL. A WEIGHT ZINC-COATED WIRES.
4. ALL PARTS EXCEPT WIRE ROPE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111, M232, OR ASTM F2329 AFTER FABRICATION, UNLESS NOTED OTHERWISE.
5. SPELTER SOCKETS AND SOCKETING PROCEDURE SHALL BE IN ACCORDANCE WITH THE SPELTER SOCKET MANUFACTURER.
6. ALL POSTS SHALL BE INSTALLED VERTICAL. WIRE ROPE SHALL BE INSTALLED PARALLEL TO TOP OF WALL.
7. WIRE ROPE SHALL BE INSTALLED TO 400 LBS TENSION LEAVING A TAKE UP OF 6" STILL AVAILABLE IN THE TURNBUCKLE. THE CONTRACTOR SHALL SUBMIT CABLE TENSIONING DETAILS TO THE ENGINEER FOR APPROVAL.
8. EACH CONTINUOUS LENGTH OF CABLE SHALL HAVE A TURNBUCKLE AT ONE END ONLY AND SHALL BE ANCHORED TO THE END POSTS.
9. INTERMEDIATE AND END POSTS SHALL NOT BE INSTALLED ACROSS AN EXPANSION JOINT.
10. CABLE FENCE WAS DESIGNED FOR A 200 LB. SERVICE LOAD ON THE TOP RAIL APPLIED IN ANY DIRECTION, IN ACCORDANCE WITH THE WASHINGTON ADMINISTRATIVE CODE 296-155-24615.
11. WIRE ROPE, SPELTER SOCKETS, TURNBUCKLES AND THEIR CONNECTIONS SHALL HAVE A MINIMUM BREAKING STRENGTH OF 26 KIPS.
12. SUPPLEMENTAL REQUIREMENTS S2, S3 AND S4 OF ASTM F1554 NEED NOT BE MET FOR THE ANCHOR BOLTS.



Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR>window files\FALL PROTECTION 1.wnd					
Supervisor	Stoddard, RB						
Designed By				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
Checked By				10	WASH.		TOTAL SHEETS
Detailed By				JOB NUMBER			
Bridge Projects Engr.				CONTRACT NO.			
Prelim. Plan By							
Architect/Specialist		DATE	REVISION	BY	APP'D		

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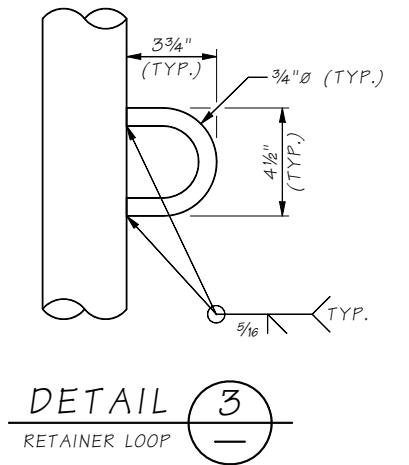
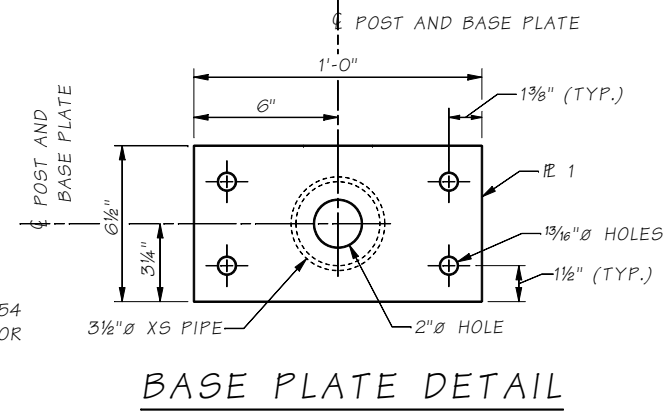
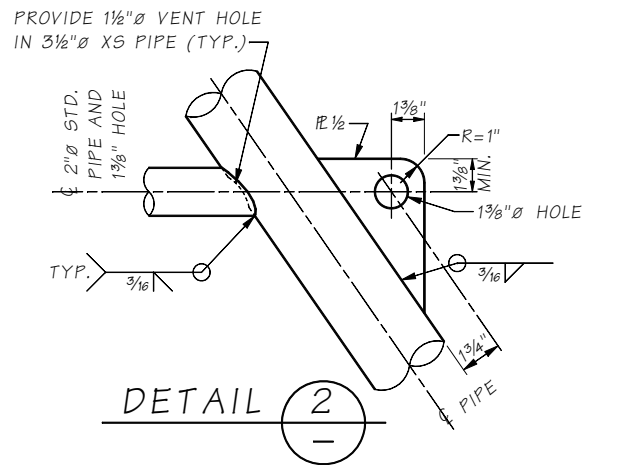
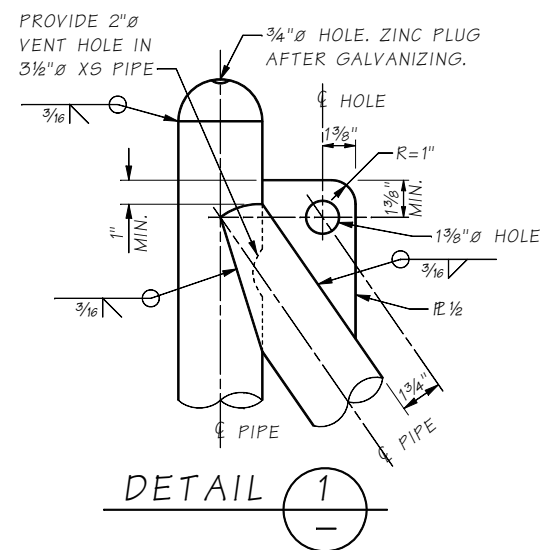
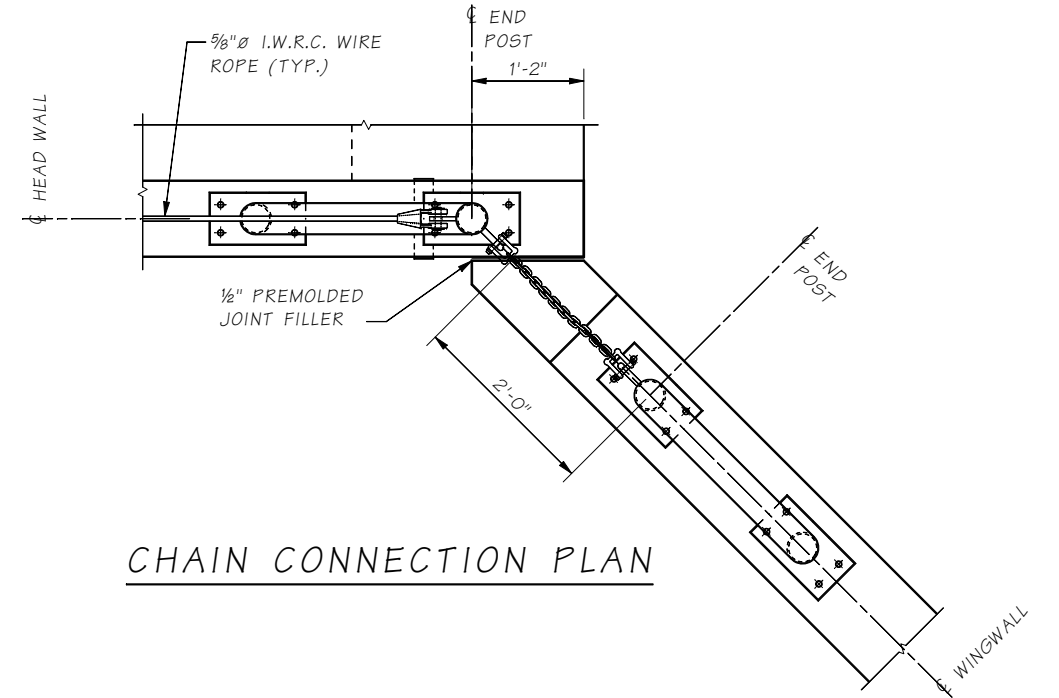
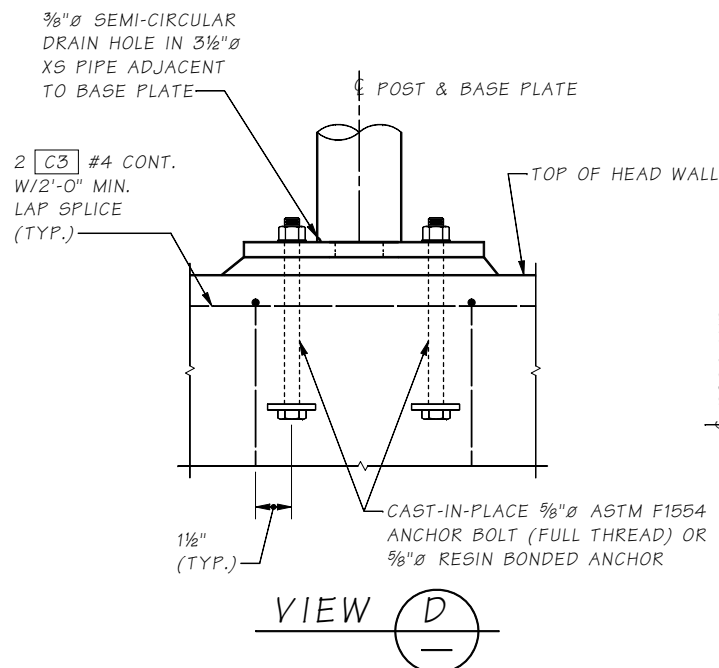
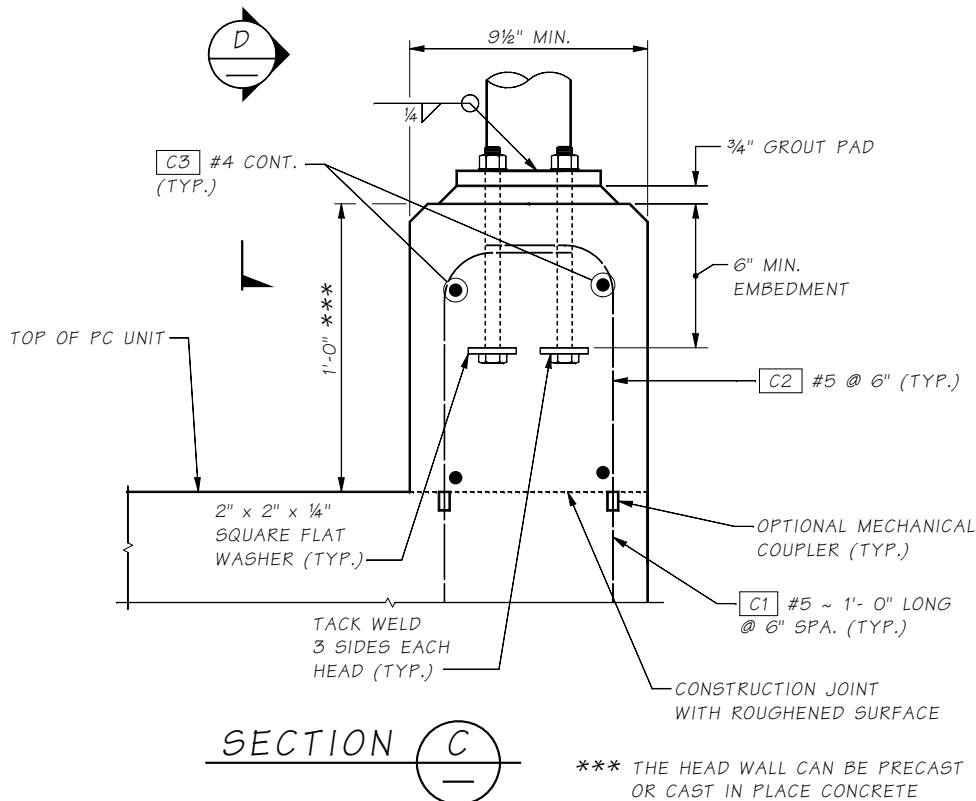
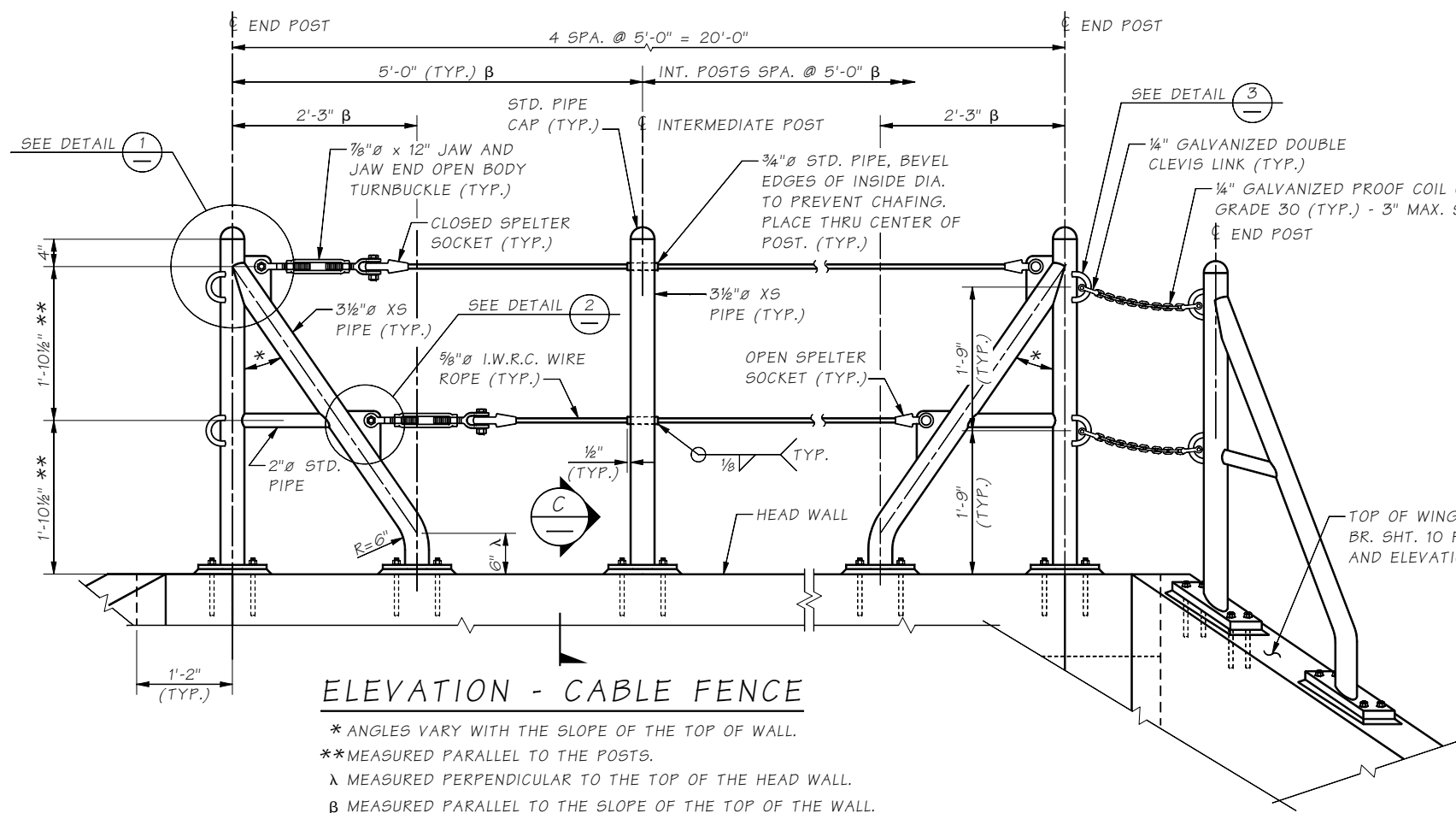


BRIDGE AND STRUCTURES OFFICE



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Washington State Department of Transportation
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SR 532		BRIDGE SHEET NO.
CHURCH CREEK BRIDGE NO. 532/8		14
CABLE FENCE DETAILS 1 OF 2		SHEET
		OF
		SHEETS



Bridge Design Engr.	Khaleghi, B	M:\X-Team\BR532-8_CHURCH CREEK_FISH PASSAGE_NWR\window files\FALL PROTECTION 2.wnd									
Supervisor	Stoddard, RB					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Designed By	Tran, LH	05/16				10	WASH.				
Checked By											
Detailed By											
Bridge Projects Engr.											
Prelim. Plan By						JOB NUMBER					
Architect/Specialist						CONTRACT NO.					
		DATE		REVISION		BY	APP'D				



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SR 532	BRIDGE SHEET NO. 15
CHURCH CREEK BRIDGE NO. 532/8	SHEET OF SHEETS
CABLE FENCE DETAILS 2 OF 2	